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Original Communications.

*INTERMEDIATE ALTITUDE FOR THE CONSUMPTIVE INVALID.**

BY B. P. ANDERSON, M.D.,
Colorado Springs, Colorado.

The object of this paper is simply and briefly to call attention to the writer's experience during the past few years with a class of patients afflicted with pulmonary disease, such as have been recommended to and have tried both extremes of altitudes without obtaining appreciable benefit; and also to record as nearly as possible the subsequent histories of these cases.

It is to be taken for granted that the majority of the medical profession, and especially the members of this society, recognize (notwithstanding the indorsement and advocacy by individual members, enthusiastic and otherwise, of the various drug, serum, and other treatments advised for the relief of pulmonary phthisis) that the greater benefit to be expected must be from climate, and that climate alone offers the most salutary and most permanently beneficial result.

We must admit that the different clima ic resorts act more or less favorably according to

*A paper read before the American Climatological Association, May, 1899.

the constitution, temperament, and actual condition of the individual case; also it must be admitted that in no climate with which we are at present familiar can such perfection be found as to justify the opinion that each and every case will receive the relief that is sought. No one climate can be considered as a "cure-all," the panacea for each and every individual case. No matter how honest our intention, how zealous in arriving at a proper discrimination and selection, the fact confronts us that the matter of climate is largely one of experiment, and that no man can advance a positive opinion as to the result to be derived. The reason for this is obvious. The history and nature of disease, however similar its manifestations, cannot be successfully treated and combated in any two persons by the same methods or by the same routine remedies. This more particularly holds good as to climate and its effects upon different individuals who may be suffering with the same disease. Take, for instance, two cases of pulmonary lesion, identical in every respect as to personal temperament, amount of area of disease, general symptoms, etc., and we find that the one will steadily lose ground; the disease, instead of becoming arrested or retarded, will advance. Often, if ordered to another and essentially different climate, benefit and frequently ultimate recovery will result to the failing patient.

With accumulated experience, furnishing evidence that location as to climate, altitude, etc, is the important factor as to results, manifestly it becomes necessary and of vital importance to the patient for the physician to advise changes of location for that class of cases failing to improve or become benefited.

As before stated, we admit advantages possessed by different degrees of altitude. We can only arrive at results beneficial or otherwise by individual experiences, and the progress, good or bad, of the individual case. Approximately high altitude to-day, as for the past several years, is recognized as possessing superior advantages and offering results to the average pulmonary invalid of the greatest permanent benefit. The high altitude climate of Colorado, or Colorado Springs, with which I have had experience for the past twenty-eight years, is especially adapted to and curative in the majority of incipient cases of phthisis (of whatever variety or type). Therefore we point with pardonable pride to the unchallenged fact that the reconstructed or cured invalid has been primarily the means of founding an empire, has brought his environment from that of a barren plain, or rugged, inaccessible mountain fastness, to the civilization of to-day—a densely populated region with all that goes to make the desirable in culture, refinement, and education. When we consider that the pulmonary invalid has alone brought this to pass, we can more fully appreciate the possibilities of climate as a factor in the cure of this disease. There are cases seeking this climate and altitude, however, which do not receive the expected relief. Many invalids whose physical condition, area of disease, and length of time affected would presuppose a favorable diagnosis yet find the altitude affording no relief, but on the contrary often proving disastrous. Perhaps the result cannot be traced (as many may be) to imprudence and mode of life, overindulgence in exercise, etc. My experience has been that in some of this class of cases benefit is received by change to an *intermediate* altitude, and for the past several years I have urged such cases to seek temporarily an altitude of from 3000 to 4000 feet above sea level, and if benefited to remain until all active symptoms disappear. Following this advice, the rule has been that such cases were enabled to return to the higher altitude of Colorado Springs, and upon the second trial improvement continued.

Experience has again taught the pertinent fact that the class of cases coming under observation which do not improve or show evidence of a subsidence of active symptoms after a residence of five to six weeks will not be benefited by longer stay, but on the contrary will continue to lose ground, and should be ordered a change at once.

In advocating the change to a lower or intermediate climate, I would be understood as meaning those cases which we term curable, or at least in which a favorable prognosis has been given. In the selection of the most favorable climate for such cases, I was largely aided by having my attention called some eight years since to the Mesilla Valley, in New Mexico, a valley situated about forty-five miles northwest of El Paso, Texas. Invalid patients coming to Colorado for the cooler summer months after having spent the winter in this valley were the first to attract my attention. Their enthusiasm as to dryness, sunshine, the greater number of days one could remain in the open air, etc., all of which advantages we have here in Colorado, did not impress me so much as did the

fact of their improvement, which could only be attributed to the advantage of altitude, which averages from 3500 to 3800 feet, combining with its lower altitude the important essential of a maximum amount of sunshine and dry air. Commencing with the fall and winter of 1892, I have regularly advised those patients who for the most part did not progress favorably in Colorado to seek this climate. Since 1892 I have a record of somewhat more than 200 cases who spent the winter months in this climate. My record embraces many cases in the various stages of advancement of disease, and many were complicated with laryngeal tuberculosis. The subsequent history of these cases shows that a large majority, or seventy per cent, improved and are still living. In the first few weeks upon making the change to the lower altitude, marked improvement was noted in every case. Active symptoms which persisted in the higher altitude subsided, and there immediately followed a gain in flesh and strength. The majority of these cases returned to Colorado for the summer months, and a few returned for shorter visits to their homes in the East. Many of these cases after having spent from one to three winters in this intermediate altitude find that a return for permanent residence in the higher altitude of Colorado is productive of no ill effects, but on the contrary continue to improve and are permanently benefited by the change. These cases upon reexamination were found to have gained complete arrest, freer expansion, greater elasticity of lung tissue, and normal respiration.

Appended tables accompany this paper, but I will not burden you with their perusal; they give maximum and minimum temperature, together with cloudy, partly cloudy, and fair days, for the years beginning with 1892 to 1899 inclusive. Patients inform me that they are enabled to remain out-of-doors the majority of days from October to May, and from the hours of 9 A.M. to 5 P.M. The disadvantages are to be found (as obtains in most cases in New Mexico) in the lack of suitable accommodations, diversion, etc.

Briefly, and I am aware not concisely, I have given my experience with a class of patients the majority of whom tried lower elevations, such as some of the southern resorts, California, etc., before coming to Colorado, but who failed to receive benefit previous to attempting the intermediate altitude.

The selection of the proper climate for the individual case is appreciated as of the greatest and first importance, and yet how difficult! It has been said long ago that the "individual result depends on the individual." No man can predict with absolute accuracy in sending a patient from home just what the result will be. I have known of apparently hopeless cases, which were advised to return to their homes with the expectation of certain death in a few months, persist in remaining, and living for years in Colorado after such advice had been given. A few years since a physician, who was then residing in Colorado Springs, and who had served on Surgeon-General Esmarch's staff during the Franco-Prussian war, walked into my office and informed me that he had been invited by a United States Army officer to accompany him overland to Fort Davis, Texas, a distance of several hundred miles. The man was apparently in the last stages of phthisis. The whole of the left lung was involved, together with the apex and to the third rib of the right. There was a large suppurating cavity in the upper lobe of the left. The physical condition was one of emaciation and prostration. I frankly told the doctor that he would not live to reach Santa Fe, one-fifth of the distance. He persisted in starting on the journey, and not only reached his destination, but improved to such an extent as to receive the appointment of acting assistant surgeon. He lived for seven or eight years afterwards, and I am informed died ultimately with some affection of the heart.

It is my belief that climate and proper environment and professional advice is the most rational, and I may say the only, remedy. If the individual finds a climate that proves efficacious in his special case, whether it be high or low altitude, that is the climate in which he should remain as long as necessary to effect recovery.

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*HYDROTHERAPY IN THE TREATMENT OF INSOMNIA.**

By Irwin H. Hance, M.D.,
Lakewood, New Jersey.

Insomnia, whether observed as a diseased condition unassociated with any other complaint or as an accompanying symptom of neurasthenia, is sufficiently often met with to warrant me in presenting to the members of this Society a short *résumé* of my past season's work. Insomnia of itself will quickly

*A paper read at the meeting of the American Climatological Society, May, 1899.

produce the neurasthenic state with its long list of vague nervous symptoms, and the physician is sooner or later forced to look for some form of treatment which will combat the two diseases. Most of us know how unreliable drugs are under such circumstances: first, because of the uncertainty of securing a definite result; and secondly, on account of the great risk run by the patient that he may contract some bad drug habit, whereby sleep is secured at the time, but the subsequent awakening brings with it the startling realization that he is the victim of one of the enslaving drugs, to escape which he must battle harder than ever man did against the evils resulting from loss of sleep.

"Sleep is a condition of physiological cerebral anæmia." Insomnia, although occasionally met with as a disease *sui generis*, always indicates a disturbed condition of the nerve centers, and, exclusive of sleeplessness in acute diseases, is usually merely symptomatic of some other disease. In all cases there exists some disturbance of two of the chief systems of the body, the nervous and the circulatory. Therein lies the main indication for treatment — improvement of the cutaneous circulation and of the nerve cells. At the same time each case must be carefully inspected for any local cause that may produce reflex nervous conditions, and by appropriate treatment these must be lessened and eradicated if possible. In so far are drugs and a proper diet powerful agents for good, as will be shown in two of my reported cases. Bearing in mind these things, let us see how we can most surely and satisfactorily influence these bad conditions. Even in the milder forms of insomnia the most careful treatment must be pursued, since it is so very difficult to prognosticate the result in this as in all other nervous affections.

To secure the best results it is wisest for the patient to change his environment, allow himself physical and mental rest, exercise out of doors only to the point that he is not unduly fatigued, abstain from all varieties of food that produce indigestion, regulate the bowels; and the physician should examine the patient so carefully that no slight disturbance of any one of the organs escapes his attention. Having thus regulated the patient's life to the best of our ability, we must seek to restore his deranged nervous equilibrium, if possible entirely without or with the scant use of hypnotic drugs. We have at our command two agents for this purpose, water and electricity. How these are applied and with what results I shall proceed to describe by my cases, and afterwards draw a few conclusions based on personal observations.

Case I.—Female, aged thirty-three. Simple insomnia. She occupies a position of great responsibility requiring much mental labor and executive ability. For several months past she had been sleeping less and less, until two or three hours was the limit of each night's rest. From lack of sleep she was physically weak and in a generally run down condition. A physical examination showed all the organs and functions healthy. No symptoms of neurasthenia were present. On January 11, 1899, I ordered her treatment to be a hot-air bath to perspiration, a needle spray and a general fan douche, a jet douche along the spine, followed by general static electrization (positive) with local breeze along spine. The effect of treatment was felt after the third bath. She slept longer and awoke in the morning refreshed and stronger. After twelve treatments she slept six hours each night.

On January 27 she was in New York four nights and slept badly; but the first night in Lakewood slept seven hours. I continued the treatment for two weeks more, and she left practically cured five weeks after treatment began. She has given up all work until next fall, and she reported to me two months later that the cure has been lasting.

Case II. — Female, aged forty-five She had no occupation, but suffered from insomnia more or less for fifteen years. For five years past she has been a distinct neurasthenic with basic headaches, scattered neuralgic pains, tenderness along spine, marked insomnia, no appetite, and a very bad circulation. Her treatment was a hot-air bath to perspiration, needle spray, general fan douche, and a jet douche along spine. She took ten treatments. Marked general improvement followed the first bath. After the third she slept well every night and gained five pounds. She stopped treatment herself because she felt that she was cured. I know she has remained well over two months.

Case III.—Male, a lawyer aged fifty. From overwork he had gotten into an extremely bad neurasthenic state and slept only two or three hours nightly. He had an old specific history. I treated him by hydrotherapy and massage last year for a similar condition for six weeks with good result. When his stomach was examined an excess of hydrochloric

acid was found. He was treated by diet and medication in the hands of a specialist, but he lost fifteen pounds during the fall and became hypochondriacal. On December 29, 1898, the treatment was begun. Positive electrization was ordered, with hot-air bath to perspiration. A circular needle spray, general fan douche, and jet douche was applied to back. At first one to two grains of codeia used to produce sleep. After ten treatments he slept seven and a half hours without any sedative. At the end of four weeks he slept continuously six to seven and a half hours. February 3 he was discharged, averaging six hours sleep. He had gained six pounds, and his general condition was much improved. He was no longer apprehensive of the future.

CASE IV.—Male, merchant, aged thirty-six; Austrian Jew. He was markedly neurasthenic, with depression and slight melancholia, and had suffered from insomnia for six months; averaged three hours sleep or less nightly. There was an excess of hydrochloric acid in his stomach secretion. On January 16 four baths were given without any effect; then positive electrization was begun and used daily with bath treatment (hot air, circular needle spray, general fan douche, and jet to back). Little effect was produced upon insomnia during first two weeks. His general nervous condition, however, improved. During the third week his sleep improved. On March 11 his gastric symptoms were noted as improved, he was resting six hours nightly, and had gained three pounds. "Hardly feels any nervousness." He now decided to continue his business, which at one time he had intended to give up in order to return to Austria.

CASE V.—Male, aged thirty-eight; a priest. For ten years he had been a sufferer from insomnia. He had tried drugs, the Kneipp cure, and for three months in Adirondacks took a bath daily in cold spring water for ten minutes without friction. He was neurasthenic, with mental depression and distinct melancholia. He took ten treatments, consisting of hot-air bath, circular needle bath with hot-water jet applied to legs, general fan douche and a jet to back, and positive electrization. Out of eleven nights during which he was under treatment, he enjoyed seven good nights' sleep, and one night slept nine and a half hours. Was obliged to discontinue treatment, and has not been heard from since.

Besides the above reported cases I have had two distinct failures, both in female melancholic neurasthenics, one of whom refused to pursue the bath treatment, and two months later developed violent melancholia. The other pursued the bath treatment alone for four weeks with slight general improvement, but with very little effect upon her insomnia.

In two patients who were treated with the electric baths and friction, followed by the circular needle bath and the general fan douche, a somnolent condition resulted from each bath, and though the patients were not suffering from insomnia their rest was more refreshing after the treatment. In some other cases where a hyperesthetic condition existed, the dry or the cold wet pack was used in place of the hot-air bath, to be followed by the douche-room treatment.

Let us for a moment consider what we accomplished by the treatment described and what deductions we are entitled to draw therefrom. By the bath treatment there is one thing that is capable of ocular demonstration to every physician and also to the patient himself, viz., an improved cutaneous circulation, as shown by an improved reaction to the eye and the loss of the sensation of cold extremities. With this surface improvement there must result a general toning up of the whole circulation and a better action of all the secretory organs of the body. The direct result of this must be a changed condition and bettering of the nerve cells throughout the cerebrospinal centers and also in the vasomotor system, whereby the symptoms which we vaguely ascribe to functional reflex disturbances become less and less, and finally lose their power for evil. We must not forget another factor, the proper application of which is almost the key-note of success in treating such cases; this is the shock to the nervous system from the change in the temperature and the pressure of the water. The stimulating effect of the shock upon the nerve centers is felt even in the simplest form of tonic baths, and by slowly increasing this through gently lowering the temperature and raising the pressure we avoid any chilling of the patient. We must secure his cooperation in the treatment thereby, and by ultimately being enabled to administer a stronger stimulus produce a more decided reaction and more lasting effect.

What part does static electricity take in the ultimate result? I can answer this best by the brief statement that during the first year of my work in hydrotherapy I had not

the means of making use of this agent, and although in two cases of distinct insomnia with neurasthenia I finally secured a general improvement of the patient and thereby an effect upon the sleeplessness, yet the influence upon the insomnia was slow in manifesting itself. During the second year by hydrotherapy and electricity combined I could see a distinct effect upon this condition in many cases in a few days, and in nearly all at the end of two weeks' treatment. I am convinced that hydrotherapy and static electricity together are more powerful in affecting insomnia beneficially than either one is individually.

With these two means it seems to me we are justified in concluding that we are capable of so far restoring the deranged nervous equilibrium, improving the nutrition and resisting powers, toning up the circulation and increasing the muscular power and action of the heart, stimulating the secretory and excretory organs, that nature is capable of adjusting the balance between the demands upon the nervous system and the exhaustion which must necessarily ensue from the constant wear and tear of life in the business and social world of to-day.

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*DANGERS OF HYDROGEN DIOXIDE IN SURGERY.**

By George W. Spencer, M.D.,
Demonstrator of Surgery, Jefferson Medical College, Philadelphia; Assistant Chief, Surgical Clinic, Jefferson Hospital.

My object in presenting this paper is not to discourage the use of peroxide of hydrogen in all surgical cases; but I am confident that a careful analysis of the cases of which I am about to speak will convince you that there are certain conditions in which peroxide of hydrogen, if used at all, must be applied with caution.

My first experience of the unfavorable action of this drug was in a case upon which I operated through the courtesy of Prof. J. Chalmers Da Costa. The patient suffered with a carcinoma of the left breast with axillary involvement; a considerable portion of the skin was also affected, and, necessarily, this was removed. After the operation it was impossible to entirely close the wound, and a small portion about its center was left to heal by second intention. By the ninth day the stitches were out and the scar was perfect, but there remained a small place which was healing by granulation. On the seventeenth day following the operation the patient was discharged from the hospital and ordered to report to the surgical dispensary for the treatment of exuberant granulations, which were gradually becoming smaller.

When patient appeared at the dispensary, three weeks after the operation, a small sinus existed. It was about two inches in length, and from it came a small discharge. To keep the sinus clean peroxide of hydrogen was injected, and this was followed by bichloride of mercury. For four consecutive days these fluids were used, and each time it was noticed that it took more of the bichloride solution to fill the sinus than had been necessary on the previous occasions. On her seventh visit to the dispensary, I probed the wound and found that the two-inch sinus had increased to three and a half inches in length and other sinuses were springing from it. Shortly after this, while injecting peroxide, I noticed a swelling which appeared almost instantaneously beneath the axillary scar. This enlargement was about half the size of an egg, and, by pressing, one could hear crackling and feel tissue crepitation. Pressure caused the swelling to disappear almost as rapidly as it had appeared. Pressure at this point caused bubbles of gas to escape at the opening of the sinus, which was fully four inches from where the swelling appeared. Tissue crepitation was not only elicited in the axilla, but it could be induced by pressure at several other points. Inflammation, which was heretofore absent, now made its appearance, and soon the whole area was nothing less than a bag of pus.

In this case there is no doubt that the expansive force of the peroxide made new channels and forced and deposited pyogenic organisms into these channels from the original two-inch sinus. After incising at several points, draining, and discontinuing the peroxide, the patient made a good recovery.

While a resident in the Jefferson Hospital I had under my care three cases which were made considerably worse by the use of this agent. The first case was an old woman, a portion of whose large bowel had been resected by Professor Hearn for carcinoma. The patient rallied rapidly from the immediate effects of the operation. On the fourth day following two stitch abscesses developed on the right side of the abdominal incision. I incised both abscesses and syringed out the cavities with peroxide. Previous to the injec-

*Read April 12, 1899.

tion of peroxide the inflammation was circumscribed and limited. In twenty-four hours there developed cellulitis on the right side of the abdomen, extensive and violent in character. The right side was swollen and tender, and pressure elicited crepitation; gas also could be detected in the tissues. By making forcible pressure at any fixed point, bubbles of air could be seen making their exit at the openings in the abscess cavities. In this case the gas eliminated from the peroxide seemed to travel in the subcutaneous areolar tissue, and it carried infection from the abscess cavities into the surrounding tissues.

The other cases in which trouble occurred were operated upon by Professor Montgomery. They also had stitch abscesses, and in both instances the abscesses were incised and injected with peroxide of hydrogen. The first of these two cases presented similar conditions to those we have just described; the other was quite different, and at one time the condition became alarming. In the last case the gas traveled in the planes of the muscles,and deposited between them the infectious material, producing distention, crepitation,and a profuse chocolate-colored discharge without discoloration of the skin. The odor was so foul that it became necessary to make multiple punctures, and wash out with sulphurous acid. In this case the rapidity and intensity of the process were so great that the muscular tissue seemed to become extensively necrosed, and the last case presented the clinical appearance of malignant edema.

In November, 1897, a physician from the upper part of the State was brought to Professor Keen's private hospital with symptoms of septic infection. The patient had operated upon a case of appendicitis which had been followed by general peritonitis. On the back of his right forearm were two or three scratches. Three days after the operation his arm began to swell and to pain. A physician had made two incisions, one just above and the other just below the elbow. These incisions were made to communicate. From such incisions a good deal of bloody serum, but no pus, had passed. Peroxide of hydrogen was injected. Three days after this injection Professor Keen made incisions in the forearm, and found pus in all the intermuscular planes. There were no enlarged glands in the axilla, and this seemed to prove that the infection was not traveling by the lymphatic vessels, but remained just where it had been deposited by the peroxide. Professor Keen thinks that the trouble in this case was caused by the peroxide of hydrogen.

Many members of the medical profession who work in minor surgery use peroxide as a routine practice. They seem to have perfect confidence in its safety, but I have seen a number of cases treated by this agent made worse by its injudicious use.

A few years ago, while investigating wounds of the hand, I saw not a few cases of palmar abscesses, which followed wounds of the little finger and thumb. The majority of these abscesses, it is probable, were caused by peroxide carrying infectious material through the theca of the flexor tendons and depositing it in the palm of the hand. If one considers the anatomy of the hand, it becomes evident that, by the arrangement of the two lateral portions of the palmar fascia, wounds of the little finger and thumb must be more dangerous than wounds of the other fingers, and that it is unsafe to use, in infected wounds of these members, any agent which has the power to forcibly disseminate infectious material. The lateral portions of the palmar fascia are composed of thin fibrous layers, one going to cover the muscles of the little finger, the other going to cover the muscles of the thumb. These layers practically form drainage-tubes and are continuous with the palmar and dorsal fascia. By this one can see how easily infection can be conveyed by an effervescing agent from the thumb or little finger to the dorsal or palmar surface—the path of least resistance.

In this city in June, 1897, Drs. Turnbull and Bryan presented papers to the Section on Laryngology and Otology at the forty-eighth annual meeting of the American Medical Association upon operations on the mastoid process. In the discussion on the papers Dr. Burnett said: "In the histories of all the cases reported as acute otitis media, followed by acute mastoiditis, I can read between the lines that the mastoiditis is a secondary infection, and in some cases I can see that the ear was overtreated and secondary infection followed." He also stated that he believed, in many instances, the secondary inflammation was caused by the use of peroxide of hydrogen, and that acute mastoiditis following otitis media has become much more frequent since the introduction of peroxide. He closes his views on the subject by saying that he knows no agent so efficient in forcing pyogenic germs into an inflamed ear as the expansive, energetic peroxide.

Dr. J. A. Stucky, in the same discussion,

said that he had seen many cases of acute mastoiditis caused by the use of peroxide of hydrogen in middle-ear troubles, and he considered it a dangerous remedy.

Dr. H. D. Hatch (*Journal of the American Medical Association*, March, 1898) said that he once had a lesson as to the explosive force of peroxide of hydrogen. In working upon a tooth his instrument slipped under the tissues almost to the eye. The wound healed and was apparently all right, but later an abscess formed well up toward the eye. There was no swelling around the eye, except at this small point, and there was no wound in the mouth. He slipped a bistoury into the abscess and injected peroxide of hydrogen. Inside of twelve hours after the injection, which had caused intense pain, the face was swollen and the eye black. He has ceased to inject peroxide into any cavity into which there is a small opening. He has had other cases where the mechanical force of the explosion gave pain. He also thinks it unwise to inject it into a bone cavity.

Janeway (*American Journal of the Medical Sciences*, October, 1898) reports an interesting case in which air emboli caused two attacks of temporary hemiplegia, the result of injecting a wineglassful of peroxide of hydrogen into the sac of an empyema. The sinus which led to the cavity had so far closed that no air or fluid escaped after the introduction of the peroxide.

Peroxide not only proves dangerous as an agent which is capable of carrying infection, but it possesses the power of acting mechanically in certain regions and of inducing distressing, as well as dangerous, conditions.

In 1894 I opened a deep abscess in the neck of a child. At the second dressing one of the assistants at the dispensary injected a fifteen-volume solution diluted two-thirds into the abscess cavity. At the time the solution was injected there was nothing unusual connected with the case. A few minutes later Prof. J. Chalmers Da Costa saw the patient (Prof. J. Chalmers Da Costa's book on Modern Surgery, pp. 27 and 105), and there existed then a condition of dyspnea and cyanosis. On introducing the fingers into the mouth of the patient he found a pharyngeal obstruction. The gas formed by the peroxide had worked its way down and seemed to have gotten under the mucous membrane of the pharynx and larynx, thus causing the lumen of these organs to be diminished to such an extent as to produce an impediment to the ingress and egress of air. In this case the external wound was enlarged and the peroxide was ejected by internal pressure.

The mechanical action exerted upon the tissues by this agent, during effervescence, is far greater than is supposed by many to be the case. It possesses the power to travel in relaxed tissues, along nerves, in the tendon sheaths, and in the planes of the muscles. For this reason it is unsafe to use it in infected wounds in certain locations, with or without pus, in abscess cavities either acute or chronic where the walls are supposed to be weak, in closed cavities, and in the tissues surrounding the larynx and trachea, especially in young children.

In the vast majority of cases where peroxide is used and the condition seems aggravated, I am of opinion that the cause of the trouble lies in the employment of this agent.

ORGANOTHERAPY IN GYNECOLOGY.

By W. A. Newman Dorland, A.M., M.D.,
Instructor in Gynecology in the Philadelphia Polyclinic; Assistant Obstetrician to the Hospital of the University of Pennsylvania.

THYROID THERAPY IN GYNECOLOGY.

Of all the forms of organotherapy it will without doubt be safe to assert the marked preeminence of the extract of the thyroid gland. None of the glandular extracts have been more frequently used, and certainly none in a greater variety of pathologic conditions.

Whatever the physiologic action of the thyroid gland may be, it has long been recognized that its secretion—as also the ovarian—exerts a profound influence upon the body-metabolism, though of a directly opposite and conflicting nature. Its presence in a normal degree is essential to the maintenance of the physical equilibrium. Thus, through the investigations of the pathologists, we now know that in cretinism and its allied condition, myxedema, either this gland or its functional activity is absent; and in those cases of exophthalmic goitre in which extirpation of the gland was practiced a most alarming train of symptoms shortly developed, directly traceable to the removal from the system of the glandular influence. An excess in the normal secretion of the gland will likewise be followed by an annoying series of phenomena such as will be noted in hypertrophy of the gland or in Basedow's disease.

At once two propositions suggest themselves, namely, in cases of the first class—that is, where there is absent or deficient thyroid action—the administration of thyroid extract to supply the deficiency should be followed by an amelioration of the clinical phenomena; and in cases of the second class—that is, where there is excessive thyroid secretion—extirpation of a portion of the gland or the administration of some antagonistic extract should result favorably. These propositions were shortly tested clinically and found to be sound in theory. The administration of the various forms of thyroid extract in cases of altered or absent thyroid function is always followed by a marked improvement of the condition present, while partial thyroidectomy has frequently resulted most advantageously in the treatment of exophthalmic goitre.

To clinical experimentation based on the foregoing theory must be attributed a series of interesting and unexpected results in thyroid therapy, such as the value of its employment in gynecologic and obstetric conditions, and its undoubted usefulness in the reduction of obesity. The *rationale* of its employment in the latter condition has been suggested by Robert Hutchinson,* who explains its action by an increased combustion of the nitrogen-bearing substances in the body, especially of the fat, but of the muscles also to a lesser degree.

Jouin† was the first of the modern writers to call attention to the close relationship existing between the thyroid gland and the pelvic organs, although Catulle states that this relationship was well known to the ancients. In addition to the influence exerted by the uterus—especially at the time of the menopause, when the ovarian influence is dying out—upon the size of goitres, he was the first to observe a diminution in the size of a fibroid tumor under the administration of thyroid extract given to reduce obesity. He obtained a considerable amelioration, and at times even a cure, of uterine fibromata and their symptoms, and of metrorrhagia rebellious to all other conservative means. In cases of purely functional hemorrhage the results had been a complete and lasting cure; also in those of hemorrhage at the menopause or dependent on flexions, versions, and other displacements. In his hands the growth of fibrous tumors was always checked by it, and it often led to their retrogression. When it was employed early it cured them. In consideration of his results obtained in cases of this kind, as well as in the case of keloid and prostatic enlargement, he suggests that this method of therapy may be of value if applied to tumors of less advanced development, as, for example, sarcomata.

Hertoghe* has found that women deprived of the thyroid gland are subject to excessive menstrual discharges; as they grow older the menses last longer, and finally become almost a constant flow. He has also noticed that a hypertrophied thyroid is always accompanied by an early and copious mammary secretion. He has demonstrated by tests on milch cows and other animals that the secretion of milk is much increased by the ingestion of thyroid extract. From his experience he concludes that myxedematous hemorrhage is directly amenable to thyroid treatment, and also hemorrhages due to even an old endometritis or ovaritis. Cancerous hemorrhages cease after three or four days of thyroidization. The pain, swelling, and congestion also decrease to a noticeable extent. Thyroid treatment, he claims, is especially indicated in cases of frequent abortion, in which the menstrual flow is so excessive that it sweeps away the impregnated ovum. He cites an instance of a woman who was able to conceive and bear a child through the action of thyroidin after many years of sterility. Thyroidin, he finds, is also useful in cases of uterine myoma, prolapsus, or retroflexion with hemorrhage, and, in general, in all cases in which it is necessary to reduce the size, sensibility, or congestion of the uterus. On account of the peculiar action of thyroidin in stimulating the lacteal secretion, it should be administered if this secretion seems to be diminishing. It has also been found that in some phases of insanity, particularly those of the puerperal, adolescent, and climacteric periods, thyroid extract seems to have marked beneficial effects.

H. B. Stehman,† of Chicago, administered thyroid tablets thrice daily to six patients exhibiting various forms of menstrual and other disturbances, including menorrhagia, metrorrhagia, amenorrhea, ovarialgia, and extreme nervousness. Each tablet represented about one-sixth of a sheep's thyroid. In each instance a most notable improve-

British Medical Journal, July 16, 1898.

†*Nouv. Arch. d'Obstet. et de Gynéc.*, 1895, No. 6; *La Gynéc.*, June, 1896.

Rev. Méd., Jan. 4, 1899.

†*American Gynecological and Obstetrical Journal* February, 1897.

ment was observed within the space of several weeks. It seems conclusive, therefore, that in these cases of pelvic congestion and sexual neurasthenia thyroid extract exerts a most remarkable and beneficial effect.

M. R. Latis* believes that the thyroid juice exerts an inhibitory or vasoconstrictor power upon the pelvic genital organs, which is proved by the gradual diminution and final cessation of the menstrual flow under the prolonged use of the remedy. Menorrhagia and hemorrhages due to endometritis, ovaritis, and even cancer are greatly benefited by it.

Robert Bell† quotes the experience of various surgeons and neurologists with reference to the thyroid gland and the genital organs. He states that Charcot, having seen women affected with exophthalmic goitre cured after pregnancy, did not fail to advise marriage, on therapeutic grounds, in the treatment of this disease. Bouilly, Tuffier, Guinard, Picqué, and Bloch, having had occasion to operate on patients affected with fibroma of the uterus or salpingo-oophoritis, in whom coexisted goitres, some of which had previously resisted all treatment, have seen the thyroid tumors disappear, or at least be considerably diminished in size, after the extirpation of the pelvic organs. Bell especially emphasizes the pathologic relationship of the thyroid body to the womb and believes that the vitality of the latter may depend to a large extent on the integrity of the thyroid function. This fact especially seems to be exemplified by the marked prevalence of metrorrhagia in myxedematous conditions. He believes also that the thyroid gland especially influences the health of the skin and mucous membranes and subjacent connective tissue.

In three cases of uterine fibroids Kleinwächter‡ found that thyroid extract exerted a favorable action in controlling the hemorrhage. In these cases the intermenstrual period was also prolonged or menstruation ceased entirely for a number of weeks. It was impossible to determine any diminution in the size of the tumors.

W. M. Polk§ states that during the past two years he has employed thyroid extract in fifteen cases of fibroid tumor of the uterus. In all but one he obtained good results. In four of the cases there occurred a distinct diminution in the size of the growth. He recommends the early and long administration of the extract in daily doses of 2½ grains.

J. Inglis Parsons* employed thyroid extract in five cases of fibromyoma of the uterus. Four of these were women of about the age of forty years, with old hard fibromata of many years' standing. No appreciable diminution in size followed after a three months' course. In the fifth case, a young woman twenty-five years of age, with a large, hard, nodular fibromyoma almost filling the pelvis and dipping down into Douglas's pouch, there occurred a distinct reduction in size. The symptoms of morning sickness and attacks of retention of urine entirely disappeared in three months' time.

Having observed in conjunction with the good results following the employment of thyroid extract in the treatment of sporadic cretinism, myxedema, and some cases of mental feebleness, more or less marked increase in the activity of the metabolic processes of the body, Stawell† was led to believe that the same agent might be reasonably expected to increase the metabolism of the mammary gland in suitable cases. Accordingly he employed thyroid tablets (presumably each representing one grain of dried gland), given from three to five times a day, in nine cases of nursing women, and in seven of these distinct increase in the quantity and apparent improvement in the quality of milk secreted followed.

R. v. Braun,‡ also reasoning from the same basis of profound alteration in the body-metabolism as a result of thyroid medication, has suggested the use of the drug in obstetrics in cases of contracted pelvis in order to prevent heavy development of the fetus. He cites an instance of a woman with a funnel-shaped pelvis, protruding ischiatic spines, and an exostosis at the right iliopubic eminence, who had been delivered by craniotomy several months previously. In her succeeding pregnancy from the beginning of the fifth month she was put on one tablet of thyroidin daily. During the first part of the remaining period of pregnancy she increased slightly in weight, and during the latter part she decreased. The fetus seemed to remain small and was allowed to go to term. She was then delivered of a 3200-gramme living

* *Dublin Journal of Medical Science*, Sept. 1, 1897.
† *Scottish Medical and Surgical Journal*, July, 1897.
‡ *Zeitsch. f. Geb. u. Gynäk.*, 1898, Bd. 37, H. 3.
§ *Medical News*, July 3, 1897.

* *Lancet*, July 23, 1896.
† *Intercolonial Medical Journal of Australasia*, April 20, 1897.
‡ *Cent. f. Gynäk.*, 1896, No. 27, p. 722.

child. The previous child weighed 4000 grammes at birth. The difference in weight of the two children may or may not have been due to the thyroidin.

Cheron* holds that thyroid extract is an excellent remedy in threatened abortion with hemorrhage, and is valuable in preventing the arrest of uterine involution after childbirth, and that it is potent against the premature return of the monthly periods. Moreover, it is a valuable galactagogue. In other words, it stimulates the mammary secretion while it lessens functional activity of the uterus. In his hands it has also proved valuable in the control of all forms of uterine hemorrhage, whether this be due to endometritis, tumor, or lesions of the adnexa.

The *contraindications* to the employment of the drug are: tuberculosis, since this seems to be stimulated rather than arrested, and grave heart disease, where it should be administered with the utmost care, and should be discontinued at once upon the first suggestion of tachycardia. The symptoms of thyroid intoxication are tachycardia, oppression, exophthalmus, glycosuria, albuminuria, and irritability. In certain cases the drug produces rapid emaciation, and sometimes gastric vertigo will be observed.

Four cases of uterine fibromata and two cases of hemorrhagic endometritis have been treated by me during the past winter by means of thyroid extract, with the following results:

Case I.—A. E., colored, thirty-eight years of age, gave birth to her last child twenty-two years ago. She complained of great loss of flesh during the preceding six months, associated with severe radiating pain in the lower abdomen. Examination revealed a number of fibroid nodules on the anterior uterine wall. Five-grain tablets of thyroid extract were administered thrice daily, and in one week's time she reported a marked diminution in her pelvic pain.

Case II.—S. K., colored, aged forty-seven years, single, complained of pain in the back and right ovarian region, and a persistent though slight leucorrhea. Her menses had never been regular, and were now profuse. Under the thyroid extract in two weeks she pronounced herself much better. The duration and quantity of the menstrual flow were greatly diminished.

Case III.—M. M., colored, aged forty-eight years, had given birth to her last child thirty years before. She was suffering from the menopausal hot flashes, a constant leucorrhea, and pain in the back and left ovarian region. She had a small fibroid in the posterior uterine wall. On December 3, 1898, the thyroid medication was begun, and on the 16th she stated that she was improved and the pain in her back was gone. Four days later her menses began and lasted for four days, the shortest time for years. They had formerly been profuse and persisted for from seven to ten days. The leucorrhea was also much less in amount.

Case IV.—L. R., colored, aged thirty-five years, single, complained of pain in the left ovarian region, frequency of micturition, and a mucopurulent leucorrhea. Her menses occurred at three-week intervals and lasted profusely for five days. Examination showed the presence of uterine fibroids with a small mass firmly fixed in the pelvis and fibroid in nature. On September 13, 1898, the thyroid tablets were administered. One week later her pain was less and she thought she was a little better, though there was no change in the micturition. At that time the tumors seemed to be undergoing some alteration in shape, and the mass in the pelvis had become freely movable. Six days later she stated that she knew she was better than when she first came for treatment; she had less pain in the back and side. On October 6 she was feeling better generally; her menses had returned on September 27 and lasted three days. They were profuse, but no more than usual. On November 1 the tumor was decidedly smaller and freely movable. Her bleeding was not so pronounced. At her last visit, on December 6, all of her symptoms were relieved.

Case V.—K. G., white, aged twenty-seven, married three years, and sterile, came for the relief of sterility. Her menses had been profuse from puberty, lasting for five or six days, and always clotted. In August, 1898, rapid dilatation and curettage were performed in the hope of relieving the sterility. On March 3, 1899, she returned and stated that she had been flooding for seven weeks, and was suffering from severe left ovarian pain. Examination showed a slightly enlarged endometritic uterus. The thyroid extract was administered, and in forty-eight hours the bleeding ceased and has not returned at the time of writing. The pain also had disappeared and the patient was feeling well.

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* *Rev. Médico-Chirurg. des Maladies des Femmes*, Nov. 25 and Dec. 25, 1896.

CASE VI.—E. E., a single girl, nineteen years of age, had been flooding for three weeks. The uterus was normal in size, though very sensitive. Thyroid extract in doses of 2½ grains three times daily controlled the bleeding in three days' time, and also materially lessened the amount of pain.

The following deductions would seem justifiable in the light of the foregoing reports:

1. The thyroid gland, in addition to its general effect upon the metabolism of the body, exerts an inhibitory action upon the pelvic genital organs, and upon the uterus in particular. This action seems to be especially marked upon the epithelial elements of the endometrium.

2. As a result of this inhibitory or vasoconstrictor action there follows a retardation of hemorrhages from the uterine mucosa.

3. This action is directly antagonistic to that exerted upon the uterus by the ovarian secretion.

4. In cases in which this conservative influence is deficient or absent, it may be restored by the ingestion of fresh thyroid gland or desiccations or extracts of that organ.

5. In gynecology, thyroid therapy is especially indicated in hemorrhagic affections of the uterus and in all forms of pelvic congestion, notably in uterine fibromata, hemorrhagic endometritis, menopausal hemorrhages, and chronic tubal disease.

6. The best results are to be expected in fibromata and pathologic conditions of recent development. The more chronic the case the more rebellious will it prove to thyroidization.

7. The thyroid influence is also found to cause an increase in the metabolism of the mammary gland, and the treatment is therefore indicated in all cases of insufficient lactation.

8. The drug may be administered in the form of the fresh gland substance; as a desiccated powder of the fresh gland; in tabloids of the desiccated gland; as the fresh juice; or in one of the various extracts of the gland, administered preferably in the form of tabloids. The same results may be obtained by direct transplantation of the thyroid gland from the sheep to the human subject. Because of the difficulty experienced in procuring the fresh gland and the repugnance which patients exhibit in consuming it, it is well to administer it in the dry form prepared by druggists—in tablets, pastilles, or capsules—in doses of 2½ to 5 grains three or four times daily. The average daily dose is 15 grains.

9. Owing to the tendency to thyroid intoxication it is well to discontinue the drug for a period of a week to ten days at regular intervals during the course of the treatment.

MAMMARY AND PAROTID GLANDS IN GYNECOLOGY.

Any consideration of the subject of organotherapy in gynecology would not be complete without reference to the results obtained from the administration of the desiccated powders of the parotid and mammary glands, or of the extracts of these glands, with which I have had no experience. These drugs have been employed by others with much satisfaction in the disorders and cachexiæ that seem to be consequent upon the presence of fibroid tumor of the uterus and certain chronic ovarian diseases. The credit of having brought the subject to the attention of the profession must be attributed to Dr. Robert Bell, of Glasgow, and Dr. John B. Shober, of Philadelphia.

As early as 1896 Bell* stated that it would appear that the parotid gland exerts a most powerful influence upon the ovaries, and that when disease exists in these organs it can be brought under subjection by the administration of the parotid glands of healthy young sheep, calves, and pigs. He further stated that it was beyond dispute that uterine fibromata, as well as hyperplasia and flaccidity of the uterus, can be most beneficially affected by the employment of the mammary glands of healthy animals. This, he said, is also true of certain diseases of the ovaries.

This form of treatment of ovarian, tubal, and uterine disease was suggested to him by the physiologic relationship which exists between these organs, as shown by mammary enlargement in pregnancy and metastasis from the parotid gland to the ovary in mumps. The effect of parotid gland upon a diseased ovary is so pronounced, especially if the uterine affection be simultaneously treated by ichthyol or other appropriate remedy, that it would be wrong, in his opinion, not to employ this remedy before resorting to operation.

In the *Scottish Medical and Surgical Journal* for July, 1897, Bell states that during the past two years he has obtained most favor-

**International Medical Jonrnal*, July, 1896, pp. 379–386; *British Gynecological Journal*, 1896–97, xii, pp. 157–170; *Lancet*, 1896, vol. i, p. 1496.

able results in over sixty cases of enlarged and painful ovaries which would certainly at one time have warranted oophorectomy. At the time of writing these women were not only perfectly well and free from pain, but also remained in possession of their ovaries. He also reported interesting cases of uterine fibromata, and uterine hemorrhages, that were either cured or remarkably benefited by the use of the elixirs of the parotid and mammary glands administered in drachm doses three times daily, or by the use of three five-grain palatinoids of the desiccated glands.

Bell reports that in cases of uterine hyperplasia there can be but little doubt that mammary gland administered in from five- to ten-grain doses three times a day has acted in a marvelously short time in promoting a speedy return to the normal condition. Menorrhagia and metrorrhagia, frequently accompanied by dysmenorrhea, have completely disappeared in the course of a few weeks, and when local treatment has simultaneously been adopted the recovery has been proportionately rapid.

John B. Shober* reports four cases of fibroid tumor of the uterus treated with mammary gland, and four cases of ovarian disease treated with parotid gland, with excellent results. He found that in the uterine cases — the women all being under the age of thirty-five years, and therefore far removed from the menopausal influence — and without the aid of any other form of treatment, there was a steady and progressive decrease in the size of the tumor, together with a steady improvement of the general health. Under the influence of the drug menorrhagia and metrorrhagia ceased, and the menstrual periods recurred at regular intervals. He believes that the mammary gland exerts a powerful influence upon the uterine muscle or connective tissue, acting in a manner somewhat similar to ergot, and quite distinct from thyroid extract, which influences especially the epithelial elements of the endometrium.

The mammary gland has never, in Shober's experience, given rise to any of the unpleasant and dangerous constitutional disturbances that often follow the prolonged use of thyroid extract; it acts rather as a tonic than as a depressant to the system. The effect of the drug in checking menorrhagia and metrorrhagia induced him to use it in hemorrhages not dependent upon the presence of fibroids, and in one case of subinvolution after labor. The results were very gratifying. He employs the desiccated powder of the sheep's mammary gland, each grain of which is equivalent to ten grains of the fresh gland. Two grains (twenty grains of the fresh gland) is made into a tablet together with three grains of excipient, and from three to four tablets are exhibited daily. In larger doses cramp-like uterine contractions are produced. Positive results may be expected in from six to eight weeks.

Shober has used parotid gland only in cases of ovaritis, in enlarged, congested, and exquisitely tender ovaries, and in cases of ovarian neuralgia and ovarian dysmenorrhea. The desiccated powder is used in the same dose and form as the mammary gland. The results he obtained by this course of treatment in selected cases were most gratifying.

American Journal of Obstetrics, vol. 38, No. 3, 1898; *Medical News*, Aug. 27, 1898; *American Journal of Obstetrics*, vol. 39, No. 2, 1899.

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*THE TREATMENT OF PNEUMONIA.**

By H. A. Hare, M.D.,
Professor of Therapeutics in the Jefferson Medical College of Philadelphia.

There are two aphorisms which I am in the habit of emphasizing to my classes — one is that "when called to care for a patient through an attack of illness the physician should be a watchman all the time, and a therapeutist only when necessity arises." Surely there is no disease commonly met with in which this holds true more than it does in pneumonia. The second is that in all acute infectious diseases, and particularly so in croupous pneumonia, patients may be divided into three classes, namely, those who are so mildly ill that all they need is good care and little or no active treatment, cases on the contrary so malignant that nothing can be done which will produce cure, and a third class which, lying between these two types, is capable of cure, but only when the individual is aided by the most skilful treatment.

To attempt to discuss the treatment of pneumonia without recognizing these facts is futile, for no one who has met this disease can fail to recall cases which so far as human foresight can tell were doomed from the first. My belief in the existence of a class in which

* Part of a symposium upon Pneumonia before the Section of Practice of Medicine of the American Medical Association, at Columbus.

patients will get well if let alone is confirmed by the fact that I have frequently seen them get well when treated so badly that nothing except extraordinary recuperative power could have enabled them to withstand the disease plus the efforts of the well-meaning attendant.

With these brief remarks let me pass on to a consideration of the various methods which may be employed, first prefacing what I have to say by the remark that what I have already said is not because I am pessimistic in regard to therapy in pneumonia, but because the proper way to practice medicine is to recognize one's limitations rather than to be carried away by therapeutic optimism.

Dividing the disease into three stages, what are the means we can employ in the stage of onset? No sooner do I enter this field than I am met with the question of the so-called abortive treatment by the use of bleeding or circulatory sedatives such as aconite or veratrum viride. It is evident at once that at the best few patients can receive this treatment, because only a few have a sufficiently bounding circulation to justify its use, and very few are seen by the physician early enough in the malady to be benefited by it—that is, they come under observation after the acute hyperemia and congestion of onset has been followed by exudation.

Let us suppose, however, that the patient has a bounding pulse and is seen with symptoms which promise pneumonia—that is, a chill, a fever, pain in the chest, an expression of anxiety, oppression, and some cough—that his general state is sthenic, as it is apt to be in a strong, hearty man, and that auscultation reveals harsh breathing and slight impairment of resonance in one spot. Shall we resort to sedative measures, and if so, what ones?

In reply to this question my answer would be yes, employ sedatives actively and briefly. In other words, use a hot foot-bath, a hot compress over the chest where it is involved, or if the fever is high a cold compress, renewing the compress often enough to maintain its primary temperature. I would give veratrum viride in three-minim doses of the tincture every fifteen minutes till three doses were given, or the patient's relaxed pulse and slightly moist skin showed its effects, and some Dover's powder to allay painful cough and increase diaphoresis. I believe at this very early period that such treatment may do much to limit the disease, or at least mitigate its severity, and I believe that eventually we may find that such treatment instituted by our forefathers and designed, to use their expression, "to break forming diseases," did break them, and perhaps did so by producing a leucocytosis or phagocytosis or development of vital activity, which further studies will reveal. Beyond the first twelve hours this treatment should not be carried out, for if not effective by that time the disease has progressed too far for such measures to do good. From this point our effort must be to guide the patient through the storm.

Before proceeding to the treatment in the developed stage of the disease, the question of the use of venesection in the early stage may be dismissed. While venesection is often valuable, later on it seems an unnecessarily rigorous treatment at this early period, and deprives the patient of valuable blood should he be exhausted by the progress of the disease. The effect of the sedatives we have named is fleeting and easily overcome by stimulants, if it is so desired, whereas the effect of bleeding is prolonged and in one sense permanent.

When the consolidation has taken place it would seem that there are four different conditions to be looked after. First, the prevention of hyperpyrexia by cold sponging with friction, the use of an ice-bag over the heart and one to the head. These local applications are of great value, I am sure. The effect of the one on the precordium is to slow the heart and perhaps to protect it from the ill effects of the fever. Certainly its use is advantageous in the majority of cases. By the use of the ice-bag to the head pain is diminished, the mind is kept clear, and temperature is to some extent controlled.

I was about to pass by the use of antipyretic drugs, because in my opinion their employment is rarely if ever of service, and when it is useful, is so by reason of their power in allaying nervousness and not because they reduce fever. In cold we have all the antipyretic power that is needed, and these drugs impair the vascular tone of the patient and decrease the activity of his blood cells.

The second indication is to aid the circulation, *if it needs it.* If one is worried about a patient and is tempted to give stimulants, and before doing so he feels his own pulse, he will sometimes be surprised to find that his own is the weaker, or rather the patient's heart is overworking and really needs no

stimulation, but sedation by means of the ice-bag. If the pulse does really need stimulation, what drugs shall we turn to? For years we have looked upon digitalis as the standby, but I believe it often fails because of the well known fact that it loses much of its regulating power over the heart in the presence of high fever. A number of times I have failed to get good results from its use until the fever was reduced by hydrotherapy or cold was applied locally over the heart, when it at once acted most efficiently. The question of the dose is as important as the choice of the drug itself. Surely digitalis is given wrongly in many cases, for the doses are too large and too often repeated. The drug is so slow in its effects that in pressing cases ten to twenty minims of the tincture, or one or two minims of a physiologically tested and standardized normal liquid digitalis, should be given hypodermically, and there is no necessity of repeating it for many hours, say for eight or ten or even for twenty-four hours in some cases. By giving a good-sized dose when really needed and remembering that the effect of digitalis is very prolonged, we provide cardiac support for hours and avoid producing the shuttle-like pulse of overdoses of digitalis. The next important thing is to be sure of the quality of the digitalis, for much of it is so different in effect from what it should be that the effort of the physician must be nullified by a poor drug.

If the pulse be gaseous and relaxed, belladonna in five- to ten-minim doses every four or five hours may be useful, particularly if the skin is relaxed.

There is no drug so much employed in pneumonia as strychnine, and I think few are so often employed without good reason. Stimulants are of four classes: either they act by providing the system with material which in its combustion adds force to the body, as does alcohol, or they supply the parts called upon by their action with increased quantities of blood, as does digitalis; they liberate reserve force and enable the individual to put forth greater strength for a time, as does coca; and finally, they may act as whips or irritants to the nervous system, as does strychnine. Strychnine is therefore the only one of these which simply goads the system to increased endeavor and does not aid it simultaneously. By giving it freely when the patient seems to be sinking into the slough of death, we may rally him to a final effort to pull through, just as the crack of a whip will prevent a team from being "mired." But the skilful driver does not lash his horses all day long, and keep on lashing them after they are stalled. He uses it heroically at the crucial moment. Strychnine puts "a wire edge" on the nervous system, and if kept up causes more harm than good. For prolonged collapse or tendency thereto we may resort to coca wine. For combating a sudden collapse, strychnine is invaluable, particularly if it be combined with atropine.

It is needless to add that a fine old brandy will often agree very well with patients who have a feeble circulation, particularly if they are advanced in years.

The value of nitroglycerin in this disease seems to me to be in direct proportion to the degree of arterial tension. If this be high, this drug is of course invaluable; if it be low, it is manifestly useless, and should venous engorgement be great it is only a very indirect means of producing relief when a much better and direct means is venesection.

The value of oxygen gas is problematical. I always use it if respiration is difficult, and it nearly always seems to make the patient more comfortable, partly by the mental effect perhaps. I have never seen a patient who needed it badly who could take it himself in the sense of holding the tube to his mouth or to his nose. He has too much "luft-hunger" to aid himself, and it must be held for him.

With the treatment of the stage of resolution I shall not deal, as the discussion of this important topic has already been greatly prolonged.

I have not attempted to present an exhaustive bibliographical article, but one which is purely clinical; and in closing this symposium I cannot do better than reassert the fact already stated, that in no disease does the welfare of the patient depend more upon the skill, ability, bearing, and discretion of the physician than in this, and that nothing is more fallacious than that such cases can be treated by any routine method. The curse of therapeutics to-day is the fact that physicians do not think for themselves, but blindly follow some method seemingly valuable, so that the personal equation of the *individual* is lost in the sum total of the *disease.* No one plan can invariably be followed, for the doctor is not treating a disease but an individual afflicted by an infection which will vary in its effects according to his susceptibility and the virulence of the invading organism.

*THE EVOLUTION OF MODERN THERAPY.**

By Simon Baruch, M.D., New York,

Physician to Hood Wright Memorial (formerly Manhattan General) Hospital, and Consulting Physician to the Montefiore Home for Chronic Invalids.

(*Continued from page 377.*)

THE RISE OF MODERN THERAPY.

Being for the first time in the history of medicine clearly defined, the issue between the spoliative and constructive management of disease was now approaching decision. Many of us have witnessed this contest. Let me rapidly trace its fortunes and draw from it some deductions for our mutual benefit.

Foremost among the modern reformers in medicine stands Hufeland, who wrote a severe arraignment of the absurdities of homeopathy, in which he exhibits the most judicial fairness. He wrote: "Medicine is a science of experience; practice or continuous experiment on human beings, and the experiment is not yet concluded. If we have allowed the Bruonians, and if we still allow the contrastimulants, to apply opium and other heroic agents in large doses, why should not the homeopaths have permission to use them in infinitesimally small doses? It is Nature which cures disease; art only bears its share in that it understands how to guide and aid it. It is infinitely better not to disturb this work than to confuse it by irrational and forcible measures, mislead its movements."

Krukenberg, of Halle, approached the true therapeutic ideal and served almost more than any one else in his day to advance rational treatment. He insisted that the physician should be filled with a pious regard for Nature. The organism must be taken as a whole. "Our art is undoubtedly capable of decisive action, but let it not mistake the fact that in many cases its activity is quite superfluous, in others quite void or inadequate, in many injurious. Indeed, what virtues are not assigned to one and the same remedy! When we read such commendations we seem to be actually standing in the presence of the mountebank's booth." These are words freighted with the spirit of truth, which should be taken to heart by all enthusiasts in medication!

Schoenlein, who taught in the Berlin University, was also a cautious exponent of this doctrine. Being intent upon curing rather than philosophizing, he used drugs without professing absolute faith in them, and when necessary he did not hesitate to bleed and use milder antiphlogistics.

Although the masses were still bleeding and blistering and purging, earnest protests against these spoliative practices became more frequent and more authoritative. The new Vienna school was destined to play a leading rôle in this propaganda. Skoda's therapeutics were pithily stated by him as follows: "Air, water, cleanliness, and temperance are the best pills. And the drug store? Well, perhaps there is some good in that, too."

Dietl wrote (1845): "Of what use is it to ascertain valvular disease of the heart with the stethoscope, the formation of tubercles by the scalpel, the diminution of blood cells by the microscope, the increase of albumin in typhoid by the test-tube? We cannot cure these diseases, and typhoid is cured more surely if we leave it to the mild care of Nature. Nature alone can heal; this is the highest fundamental law of practical medicine, to which we will be forced to adhere even when a curative principle which is subordinate to it will be discovered. This chiefest fundamental law has been misunderstood in all times. The educated physician rarely has the courage to confess it to his patient. While the physician should not promise more than he can really fulfil, he should be active at the bedside, always ready to help. A rational treatment is therefore the highest aim of the physician, and the greatest benefit which suffering humanity expects of medicine. The principal thing is not to damage the patient—Nature produces and maintains; therefore it may also cure. Among all curative powers, the curative power of Nature must be acknowledged as the highest. What she cannot do we must endeavor to do; what she is capable of doing we need not do. Another able exponent of this school appeared in Wunderlich. He opposed therapeutic nihilism as hopeless, and justly taught that although in almost all forms of disease a number of cases recover without the physician and many other cases are lost in spite of all medical effort, there yet remains a considerable number of cases in which an intelligent intercession on the part of the physician is of most positive consequence. It is a very narrow conception of professional activity to suppose that its sole object is to restore health to the sick. Shortening of suffering, removal and mitigation of discom-

*Address before the Society of the Alumni of the Medical College of Virginia.

fort, protection against threatening dangers, are quite as serious duties."

The teachings of the Vienna and French schools exercised a favorable influence upon the leading physicians in England and America. In England we find them represented by the great Edinburgh clinician, Hughes Bennet, who wrote:* "Most diseases in vigorous constitutions, so far from having a tendency to destroy, have a marked tendency to get well of themselves, whilst instead of loss of blood, weakness, and prostration being remedies, they are sources of danger and the chief cause of a fatal result. I remember accompanying M. Louis many years ago in his visit to the Hôtel Dieu. Asking him what treatment he gave the numerous cases of severe erysipelas I saw there, he replied none at all, because they all get rapidly well of themselves in healthy constitutions. And I found it to be so. In the many cases of erysipelas in the Royal Infirmary I have never given the tincture of iron or anything else but good diet, with lotions of acetate of lead, flour or oil locally to alleviate irritation, and I have not had a fatal case. It is the book of Nature, which is open to all, that we ought to peruse and study; and why should we read it through the eyes of past ages, when the light of science was comparatively feeble and imperfect, instead of bringing all the advanced knowledge of the present time to elucidate her meaning."

In a most philosophical and logical manner Bennet attacks the prevalent practice of bleeding and mercurializing, insisting that "the real tests of successful practice are not to be sought in the alleviation of symptoms, but in the removal of disease, and that treatment is the best which, *cæteris paribus*, causes the fewest deaths and brings recovery in the shortest time. He states that a vigorous antiphlogistic treatment of pneumonia was followed by a mortality of one in three cases; the treatment by large doses of tartar emetic, according to Rasori, by one in five cases; moderate bleeding, according to Grisolle, resulted in a mortality of one in 6½ cases; the dietetic treatment combined with occasional small bleedings and emetics in severe cases (Skoda) gave one death in seven cases; and the purely dietetic treatment of Dietl one in thirteen cases—all being reports from large hospitals. The result of treatment directed to further the natural progress of the disease in the wards of the Royal Infirmary of Edinburgh under Bennet's care was one death in forty cases; there being no mortality in uncomplicated cases.

Bennet taught also that "the confident belief in mercury causing absorption of lymph is not only opposed to sound theory, but like the effect of bloodletting, it is not supported by experience. I cannot," says he, "resist the conclusion that the principles which led to an antiphlogistic practice in acute inflammations were erroneous, and are no longer in harmony with the existing state of pathology. Read the accounts of distinguished teachers and hospital practitioners as to the effects of bloodletting and compare them with what you have seen here with your own eyes of the successful treatment of inflammation. So powerful and so persistent have been the doctrines of the past that notwithstanding the facts which I made public in 1857 as to my results in treating pneumonia, and notwithstanding the fact that an antiphlogistic practice in this country is almost universally abandoned, every systematic work up to this date (1864) still recommends for that disease bloodletting, antimony, and calomel."

Here we have a true picture of the status of therapeutics in England in 1864.

These rational views percolated very slowly through the mass of the profession in America. Notwithstanding that Oliver Wendell Holmes had sent the shafts of irony into the ranks of the polypharmacists, and Bigelow had (1835) written his "Self-limitation of Diseases" and "Nature in Disease," antiphlogistic treatment continued in vogue until Austin Flint and his successor called a halt. How difficult this reformation was is evident from the severe criticisms made by the American editor of Reynolds' System of Medicine in 1879 upon the advanced therapeusis of the English author, which conclude as follows: "The intention of these remarks is not to antagonize but to qualify the summary conclusion which the language of Dr. Reynolds appears to convey, that venesection and kindred measures may with advantage be dismissed as obsolete. Of names not yet antiquated in favor of the occasional and moderate use of the lancet in the early stages of acute inflammatory disorders it may suffice to mention Aitken and B. W. Richardson of England, Niemeyer and Wunderlich in Germany, Jaccoud, Herard, and Count in France, S. D. Gross and Fordyce Barker in America."

The influence of the modern Viennese school upon therapeutics had now become

* Practice of Medicine, p. 295.

quite pronounced, at least among the leading physicians of the world. Especially in acute diseases was its trust in Nature effectively applied. When, however, Virchow proclaimed in 1854 (*Spec. Path. and Therap.*, vol. i) a deviation of temperature as the pathognomonic sign of fever, and showed that it was due to increased tissue change which in its turn is traceable to an inhibition of the heat-regulating centers by the fever-producing element, and this was supported by exact thermometric measurements, the leading clinicians of Germany sought in the reduction of this pathognomonic sign the all-important therapeutic indication. Bartels, Juergensen, Liebermeister, and others endeavored to prove that an abnormally high temperature was really the chief lethal factor in the infectious fevers, and as a logical corollary reduction of temperature was the chief aim in their treatment.* Digitalis, quinine, veratrin, cold baths, and later antipyrin and other coal-tar products were plied with might and main. At last scientific precision was in view; the thermometer demonstrated exactly the needs of the suffering system and its remedy. This doctrine spread rapidly, owing to speedy modes of communication, over the entire world. A new era seemed to dawn: antipyresis became the watchword, which has misled the medical profession as sadly as antiphlogosis had done in former years!

When our own Welch and others showed the untenability of the excessively lethal influence of high temperature, and when the uncertain quinine and salicylic acid as antithermics were replaced by the positive antipyrin, the eyes of calm bedside observers were opened to the fallacious theory and practice. They reasoned that if high temperature was really the lethal factor, the key to the solution of the treatment of acute diseases must be found in antipyrin! But, alas, though this agent reduced high temperature with positive certainty, its influence on the mortality statistics was either negative or actually unfavorable; the only advantage attained seemed to be that antipyrin permitted the patient to die with a lower temperature.

This is the first instance in the history of medicine where a medicinal agent pointed the way to more rational treatment of disease, and was afterwards abandoned. One who has passed through the various therapeutic phases of the latter third of this century in the treatment of fevers, and who, like myself, was taught cupping, blisters, mercurialization, nauseants (nitrous powders), veratrum, and passed on to aconite, digitalis, salicylic acid, alcohol, quinine, antipyrin, cold sponging, and baths, can realize the enormous change produced by the discovery of the coal-tar antipyretics, the avidity with with which they were taken up as a *magnum donum dei*, and the sad awakening when their vaunted curative action was disproved. Had this great discovery been made many centuries ago, when means of communication were meager, and methods of observation and investigation were imperfect, it would have required several centuries to demonstrate to physicians that they were pursuing an *ignis fatuus* when they sought in reduction of temperature the patient's salvation. Happily we live in a more favored time. Not alone have the damaging effects of medicinal antipyretics upon the excretion been clearly demonstrated, but the investigation upon the subject extended to clinical studies on the comparative effect of these antipyretics and the cold bath treatment. These were made chiefly by Ernst Brand and his follower, A. Vogl, who thus discovered that the beneficial effect of the cold bath was not due to reduction of temperature, inasmuch as its antithermic power was ludicrously inferior to antipyrin. They correctly concluded, too, that the beneficent results from cold bathing in typhoid fever were really due to a refreshing stimulating effect upon a depreciated nervous system. This view had long been taught by Winternitz and other hydrotherapeutists, but had not been heeded until recent years. Thus the failure of the much lauded coal-tar antipyretics had led to the enlightened and correct treatment of fever, chiefly by cold hydriatic procedures.

THE LESSON OF HISTORY.

Fellow alumni, I have sketched for you the lights and shadows of therapeutics from the pages of history. The colors are drawn from life, for I have permitted each exponent to speak in his own words. How does this rapidly drawn sketch strike the unbiased seeker after therapeutic truths? What lessons does it inculcate? How may a more useful therapy be evolved?

* Wunderlich, a leader of nihilistic therapeutics, even abandoned it when the thermometric observations for which he is noted, in typhoid fever, established the danger of high temperature, and sought in infusion-digitalis a panacea for this disease. Its reputation lasted three years, when one of his own pupils, Thomas, overthrew its dominion.

We are saddened by the fact that the history of our profession is darkened by somber shadows cast by each epoch. When we reflect that medicine began its career under the glorious ægis of a Hippocrates, whose insight into the true aims and possibilities of therapy has been demonstrated to have been almost inspired and prophetic, so that we must recognize the fact that even to-day our therapeutics approach perfection only in so far as they approach the ideals of our great Nestor, our hearts must be bowed with sorrow over the painful revelation that twenty centuries have passed away in argument and disputation over the treatment of disease, while suffering humanity lay prostrate, helpless victims of their errors —errors due to the neglect of the teachings of Hippocrates and to indifference to the warnings of a few brave and wise men who cried aloud in the anguish of sorrow and despair, urging a halt in the spoliation of human blood. If you accept without fear and without favor the testimony I have just cited before you, you cannot avoid this sad conclusion. Hippocrates himself with characteristic prevision foresaw it all, for he warned us that "disputes among doctors engender disrespect of the whole art among the people, so that they begin to doubt the existence of medical art. For in the treatment of acute diseases practitioners seem to disagree so much that what one declares as the best is by another thrown aside as the worst."

Viewing the medical profession in the light of its own history, we can hardly be surprised that it has been the butt of satire from the time when Plato said that no gentleman should devote himself to medicine as a calling, to Molière and to the present day, when, as in a recent newspaper discussion on Kipling's recovery from pneumonia, a writer was applauded who regarded pneumonia as less dangerous than the doctors who treat it.

While in the sanctity of our alma mater's home I unburthen the sad thoughts which the contemplation of the history of therapeutics inspires, I am not oblivious to the fact that other professions are not exempt from error. Let us not therefore condemn our predecessors, who often accomplished wonders under the most inauspicious conditions, and who were misguided by false lights, their pathway not blazoned by knowledge which has since their day and generation dawned upon us. Let us rather endeavor to draw from their deeds and writings lessons that may inure to the advantage of suffering humanity, which entrusts its best interests into our frail hands.

This is the burthen of my words to you to-day!

What are the chief errors which the history of therapeutics emphasizes?

1. The persistent effort to attack disease as an entity—an enemy which has invaded the human body and which must be driven from its stronghold. With few exceptions this idea, as I have shown, pervaded the theory and practice of all physicians so completely that even many enlightened practitioners of the present stagger under it. The disease is treated; it is attacked by the doctor with might and main. In acute cases phlogosis among the ancients, inflammation among the moderns, demanded venesection, purgatives, emetics, and revulsives. With few exceptions the ruling idea was to weaken the enemy, to destroy him. The result was disastrous. The doctor and the disease fought the valiant fight to a finish—but too often the patient also was finished! Being the battle-ground between the contending forces, he suffered from both. If he succumbed, the disease was charged with the victory; if he survived, the remedies of the doctor received the credit. How fallacious this idea is is clearly shown by history.

Bacteriology has discovered certain microorganisms, which appear to be present in certain diseases, and great industry is displayed in searching for remedies that may be antagonistic to these under the false idea that they constitute the disease. Let the search for specifics continue, but let us not permit ourselves to be misguided by the noble ambition and continue to fight disease with antiseptics and antimycotics which cannot reach the microorganisms that have entered every recess of the suffering body, and which would damage the latter, if they were capable of destroying the former.

Until other specifics are positively found, I would urge upon you *not to treat the disease, but the patient.*

2. Another error pointed out by medical history is the *neglect of the Hippocratic teachings regarding the vis medicatrix naturæ.* The sad consequences of this neglect run like a darkening shadow throughout the entire history of therapeutics. Now and then men like Erisistratus among the ancients and Hufeland and Audin-Rivière among the moderns attempted, as we have seen, to recall their colleagues from their false practices. The

regulative capacity of the human organism, which had been observed by them, had embedded itself in their minds, and they sought with all the earnestness of their natures to convey its salutary tendencies to ears which, alas, proved deaf to the most eloquent appeals. Not until the latter half of the present century do we find their warning lessons heeded. The Vienna school, led by Skoda and confirmed by the success of medicinally inert homeopathy, inaugurated a nihilistic practice, founded upon what they regarded as a scientific basis. The physician, it is true, now occupied a more dignified position; he no longer attacked disease. But he erred in the opposite, though not so destructive, direction of trusting too much to Nature. The therapeutic nihilist failed to realize that even in health he does not trust to Nature alone, but aids her by proper care in habits, removal of irritating elements, etc., and that in disease there is often even greater demand for aiding Nature in the execution of her beneficent designs. Moreover the patient, distressed by illness, was not content with the improved exactness of diagnosis nor with the more scientific attitude of his doctor. Such is suffering human nature. The sick man clamors to be cured; he not only wants to know the nature of his ailment and its probable outcome, but he demands to be placed in the best possible position to attain a pleasant and rapid recovery. The doctor cannot stand an idle spectator of Nature's process of cure; he feels himself impelled to act, to act promptly and wisely. This brings me to another error in the therapy of the past and of the present time.

3. *The treatment of symptoms.* The nihilistic treatment of disease introduced by Skoda and practiced by his followers did not satisfy the people, who demanded active treatment when sick. To meet this serious issue, the expectant method was evolved, which claimed for its object the treatment of disagreeable, painful, or threatening symptoms, the forestalling of dangerous enfeeblement, by timely and abundant nutrition and stimulation. Being a vast improvement upon spoliative methods, more satisfying, and really more effective than the nihilistic method, it rapidly obtained a large following in all parts of the world. It is to-day the accepted treatment of all acute and many chronic diseases. In the eagerness to satisfy the urgent demands of the patient or of the disease, the physician errs in the opposite direction when he attempts to meet every symptom. Hippocrates regarded bleeding as a valuable remedy because it relieved pain in the side, and many modern remedies have attained reputations because they relieved symptoms. Veratrum viride reduces the pulse to normal, digitalis increases its tension; antipyrin reduces temperature to normal; chloral and sulfonal produce sleep; morphine relieves pain. Besides these positive remedial agents there is a host of others, which have obtained more or less repute, through commercial propaganda or medical self-deception. Thus the materia medica has grown enormously, until to-day scarce a day passes without your receiving a circular or an agent vaunting this and that remedy for this and that symptom, and sustaining its claims by scientific and pseudo-scientific statements. The physician has learned sadly by experience the utter fallacy of these claims. He realizes that while the reduction of pulse and temperature by medicines may give temporary comfort, they are toxic agents which depreciate the vital strength. Veratrum produces collapse, morphine checks secretion, chloral enfeebles the heart, and the coal-tar antipyretics have been proven to interfere with excretion of urea. Nevertheless we need not hesitate to use the latter moderately in diseases of brief duration—to relieve muscular pains, to reduce high temperature, to produce diaphoresis. They are valuable remedies for the production of comfort in the diseases in which there is no toxemia, and even in the infectious fevers an occasional dose is comforting without being harmful.

Cold ablutions and baths have been ascertained to be less actively antithermic, but their effect being refreshing and antifebrile, they have become the favorite modern treatment for fevers.

Bloodletting was used by Hippocrates for subduing pains in the side in pneumonia and allied affections. His practice was followed for 1800 years ere its harmfulness was realized. Morphine has proven equally efficacious and less harmful; hot poultices and later cold compresses soothe the pain in most cases. A milder and less damaging treatment of this symptom has thus been evolved, and yet the patient's comfort is not neglected. The routine treatment of symptoms must, however, be constantly striven against; the patient's demand for relief must be met, but not when more harm may result from following our sympathy than good from our judgment. This is the lesson of history.

4. The attempt to elevate medicine to the

rank of a science is another error emphasized by history, which clearly demonstrates that the accumulation of data and the speculation upon theories do not make a science. Medicine cannot reach beyond the limit flatteringly assigned to it by Bacon, who called it "a conjectural branch of the natural sciences." Despite the enormous mass of positive data accumulated during the latter half of the present century—*i.e.*, during the most brilliant period of medicine—the latter still occupies the position of which Virchow wrote in his salutatory editorial of the *Archiv fuer Anatomie und Physiologie:* "Therapeutics must rise from its empirical standpoint; cultivated by practical physicians and clinicians and combined with pathological physiology, it must be elevated into *a science, which up to this time it is not.*" This was written fifty years ago, and it is true to-day! The reason is evident. Therapeutic problems involve so many uncertain and indefinite premises that deductions from them must be equally inexact and therefore unscientific. Nevertheless the search after positive data must continue, in order that a medical art may be constructed upon a scientific basis. Such a therapy is now in process of evolution in the modern development of the hygienic, dietetic, climatic, and hydriatic management of patients, as illustrated by typhoid fever among the acute and phthisis among the chronic maladies.

Having pointed out the therapeutic errors of the past and present, let me state as briefly as possible what I humbly conceive as the remedy. Therapeutics will not be perfected until we return to the simple teachings of Hippocrates, which have governed some of the best minds of our profession, even when their judgment was obscured by darkest ignorance of the processes of health and disease, which misled their striving after truth.

Standing in the brilliant light of latter-day physiology and pathology, aided by epoch-making discoveries in bacteriology and chemistry, and provided with instruments of precision, we are in a position to avoid the errors of the great Nestor, while striving to attain that deep insight into the processes of Nature which he taught to be the surest guide to the true art of healing.

A normal relation between the income and output of the human organism, an exact performance of work by each organ for the production of heat and labor in the maintenance of life—these represent a condition of health. They are governed by laws as inexorable as any law of Nature. The entrance of an etiological factor which disturbs these normal conditions does not suspend these laws, but directs their operation to the effort of readjusting the disturbed relations, by diminishing the work of one or more organs and increasing that of others—all with the single purpose of protecting the suffering organism against damage and death.

Ripened experience leads me to reiterate to-day what I said over a quarter of a century ago.* "As the healthy organism stands under the maternal protection of the laws of Nature, so does the disease. How else can we explain those remarkable processes, whereby health results from the chaotic and turbulent forces that violently assail the human economy?

"To these laws do we trace that *vis medicatrix* whose guidance we should ever seek, which arouses the whole organism to rebellion, when it is invaded by noxious agencies that endanger its integrity. *Disease is not the negative of health, for the same forces which are silently evolved in the normal and peaceful action of life are aroused from their quietude by unfriendly influences.* Order and law reign even where the human eye discerns only labyrinthine confusion and disorderly turmoil." Having held this view for the greater period of my professional career, I have derived more satisfaction and consolation from it than from all the books in my library. When difficulties assailed me and doubts threatened to obscure my judgment, I paraphrased Cromwell's warning, "Trust to God and keep your powder dry," into "Trust to Nature and be prepared to act."

The turbulent manifestations of disease are often but evidences of the antagonism between the action of the etiological factor and the activity of the curative factors in the organism. If the former prevail the patient succumbs or the disease becomes chronic; if the latter predominate the patient succumbs.

Rest, exercise, heat, cold, food, drink, light, air, baths, avoidance of unfavorable conditions—these are the means which unconsciously and automatically operate for the maintenance of healthy conditions. Their adaptation and utilization by the physician may restore the disturbed equilibrium in disease. Their regulation requires more judgment and skill than the prescription of medicines, because they are more flexible,

* Presidential address before the South Carolina Medical Association, 1873.

less easily applied, and less rapid in effect. They are unfortunately not so well taught and understood as is the materia medica. Do not understand me as despising the latter. Among the vast array of useless articles it contains some remedies—alas, but too few —that may be of great value, if judiciously applied, and without which I should feel myself shorn of considerable influence. It should be the chief aim, then, of the modern physician to treat the patient and not the disease, by girding the former with strength to withstand the latter, whether it be by physiological agents, as baths, by bacteriological products, as antitoxin, or medicinal articles, as quinine, always with an eye single to the safety of the patient.

The multiplication of remedies for each disease has done much to retard the advance of therapeutics. Simplicity is the first prerequisite to precision and success.

Let me cite briefly a practical illustration of the beneficent evolution of modern therapy, which I have drawn from that familiar disease, enterocolitis, the so-called summer diarrhea of infants. Time was when this very common disease was treated as an inflammation of the bowels, with leeches, poultices, mercurials, and other antiphlogistic and spoliative measures. Later a more conservative course was adopted — laxatives, chalk mixture, opiates, and astringents being the chief remedies.

Fellow alumni, you have doubtless, like myself, experienced much anxiety and sorrow in these cases, and you have, as I often have, dreaded to encounter them. How helpless were we to save these little sufferers—how impotent even to prolong their lives! They died from marasmus or from so-called spurious hydrocephalus. I say candidly there is no disease in which I felt the inadequacy of my art so keenly as in these trying cases, until Soxhlet, Escherich, and others demonstrated them to be chiefly traceable to the ingestion and multiplication of microorganisms present in the food, which produced pathological changes analogous to those resulting from septic microorganisms. Like the latter they produce heat, redness, and swelling, with all their concomitants and sequelæ, only modified by the location and functions of the parts involved. This clearly ascertained pathological fact has led not only to the prevention of the disease by proper sterilization of the food of infants, but it also afforded a key to its management. Thorough cleansing of the affected tract, best accomplished by lavage and enteroclysis, and in cases accompanied by much fever cool ablutions and baths to refresh the depreciated nervous system, have revolutionized the results in these cases. Whoever has, like myself, witnessed how these withered little creatures, with their stony gaze, parched lips, wizened faces, and panting chests, gradually sank into coma and death, while their vitality was being sapped by choleraic stools which neither astringent nor opiate could safely control, and who now sees these same sad cases quickly bloom into health and joyous child life under the modern management, must feel as grateful for living in this happy era as is the surgeon who has passed from the septic into the aseptic era of his calling.

A successful therapy has been evolved from scientific basic data. The dawn of a happier therapeutic era is upon us. Under earnest investigation of the laws of organic life, under incessant search for and recognition of errors, the evolution of therapy will go on to the end of time.

THE INDICATIONS, CONTRAINDICATIONS, AND DANGERS OF THYROID MEDICATION.

At a recent meeting of the Academy of Medicine of Paris, FRANCOIS FRANCK called attention to the dangers of thyroid medication, which he thought required us to be cautious in its use. He pointed out that coma, convulsions, and death may follow a massive injection of thyroid juice into an animal, and that Ewald, Langendorff, Gley, Haskover, and others have testified to these poisonous properties; while Lanz has shown that it causes excessive acceleration of the heart, and Charrin that it caused rapid emaciation. Dale-James has shown that it is possible for it to cause glycosuria. All these symptoms have been developed in the lower animals, but in man vertigo, tachycardia, pain, and great feebleness have been produced, and even death has been caused from cardiac collapse. Two such cases have been reported by Murray, one by Thomson, and one by Vermerhen. While these facts do not prevent us from using thyroid gland, Francois Franck thinks it should make us very cautious about its employment; or in other words, the fact is recognized that all remedies possessing much power cannot be abused. — *Revue de Thérapeutique Médico-Chirurgical*, Feb. 1, 1899.

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Leading Articles.

MALARIAL NEPHRITIS.

The medical profession is gradually learning from increasing experience that in the great majority of instances nephritis is a secondary process set up by some diathetic or infectious condition which may be considered its true primary cause.

The increasing knowledge which we have obtained concerning the influence of infectious diseases upon important organs, such as the liver and kidneys and the various lymphatic glands, has enabled us to see more clearly that in the presence of these diseases a number of conditions harmful to the kidney may arise. In the first place, they are all of them associated with more or less perversion of the circulation of blood and lymph; again, most of them are accompanied by more or less marked change in the heart and in the blood-vessels. Once more, the progress of the disease frequently results in congestion, and the toxic material produced directly or indirectly by infecting microorganisms naturally damages those organs most concerned in the destruction of these toxic materials and their elimination from the body.

In the study of the action of drugs it is the duty of the physician not only to regard with care the effect of the remedy upon the organs which need its influence, but also to study this effect upon those organs which receive it when it is first taken and those which eliminate it from the body after it has performed its function.

So, too, in the study of infectious processes, we should not only regard the notable lesions produced in certain organs for which certain microorganisms have a selective affinity, but we should also have a broad enough vision to recognize that the points of entry and exit may undergo changes worthy of our consideration and capable of producing grave alterations in the patient's condition.

We are accustomed to recognize the fact that scarlet fever, for example, is peculiarly prone to produce changes in the kidneys, that diphtheria may result in degeneration of the nervous mechanism controlling the heart, and that rheumatism seems to have a particular affinity for the cardiac valves. More recently it has been found that in a large number of instances typhoid fever manifests its primary effect upon the lungs and kidneys, and in some instances may leave the glands of Peyer or the solitary glands of the large intestine entirely untouched. Further, that the bacillus of Eberth may be found in vegetations upon the cardiac valves, in the kidney, and in various other portions of the body, where until recently it was not supposed to be present. Still more recently the belief of some of the older clinicians that malarial infection was capable of producing serious changes in the kidneys has been receiving confirmation through more accurate and scientific observations, and the writings of Osler and Thayer at the Johns Hopkins Hospital have done much towards illuminating this heretofore little understood subject. Aside from Dr. Thayer's well known contribution upon the relationship of malaria and nephritis, he has recently read before the New York Academy of Medicine still another paper, in which he expresses the view that malarial nephritis is very much more frequent than has usually been thought, and makes the interesting statement that the frequency of albuminuria in the estivo-autumnal fevers is almost as great as it is in diphtheria, reiterating also his earlier statement that in 768 cases of malarial fever admitted to the Johns Hopkins Hospital, albuminuria was present in 44.6 per cent and renal casts in 16.4 per cent, indicating there-

fore that the albuminuria was in all cases due to congestion or other conditions in the kidney. Further than this, Dr. Thayer believed that the renal changes appear to be due to the direct result of damage to the kidneys inflicted during the elimination of toxic substances.

His paper has also brought up the question of the value of quinine in malaria, particularly in relation to nephritis and hematuria. This question was discussed in the editorial pages of the *Journal of the American Medical Association* many months ago, and this discussion resulted in a fervid special article in the *Medical News*.

It is our wish at this time to express the belief, which has also already been expressed in a recent editorial upon this subject in the columns of the THERAPEUTIC GAZETTE, that no one can afford to urge the universal employment of quinine in all cases of malarial infection, whether they be hematuric or not, neither can he exclaim in favor of total abstinence from quinine in such cases. This fact is well illustrated by a case reported by Dr. Thayer, thus: A patient suffering from quartan infection suffered from a paroxysm, and under the administration of quinine the parasites disappeared from the blood for four days. At first there was a large percentage of albumin in the urine with granular, hyaline, and epithelial casts, but under the use of quinine the condition of the patient rapidly improved; although the edema disappeared the urine remained abnormal some months later, and the child died from uremic coma. The post-mortem revealed considerable interstitial nephritis.

Further, Dr. Thayer asserts that the study of his case indicates the greater frequency of nephritis in long-continued and ill-treated patients.

It is, then, our duty to remember, first, that nearly all infectious diseases exercise their malign influence upon more than one portion of the body, and in the treatment of these affections to use remedies with sufficient caution to gain all the benefit possible from their specific influence without causing at the same time damage in other parts, by reason of a collateral influence of the drug employed.

THE CONTRAINDICATIONS TO THE USE OF CERTAIN WELL KNOWN DRUGS.

In the treatment of disease it is required of the physician that he should exercise great care as to diagnosis and to the recognition of the symptoms presented which need to be relieved. It is of almost equal importance also that he should study the possible presence of conditions which will so modify the action of his remedies as to make them useless or so pervert their activities as to cause them to be harmful.

By far the most common factor to be met with in the latter respect is individual idiosyncrasy, a knowledge of which can only be obtained by careful questioning, and in some instances only by making a trial with this or that patient. Certain drugs produce effects which prevent their use in full doses in some persons with great constancy, while others seem to agree with the patient surprisingly well. While idiosyncrasy may prevent the use of any drug, certain drugs seem to be peculiarly apt to cause disagreeable manifestations even when used in great moderation. Among these quinine, iodide of potassium, opium, belladonna and its congeners, mercury, and pilocarpine occupy a prominent place.

It is not possible in this brief space to discuss all the symptoms arising from the use of quinine in the presence of idiosyncrasy. In some instances the ordinary effects of very full doses of the drug are produced by a very small quantity of it, or in other words the patient is peculiarly susceptible to the physiological action of the remedy. In still other instances these effects are so exaggerated as to hold only a slight resemblance to these ordinary symptoms, and in others the drug causes manifestations quite different in degree and kind from any physiological effect. Thus one patient may suffer from great fulness of the head with partial deafness after taking quinine, another will become entirely deaf, and a third will suffer from profuse skin lesions varying from a mild erythema to severe bullæ and even pustulation. In some cases, in place of or in association with deafness, there may be temporary amblyopia or blindness. Rarely, one meets with great irritability of the stomach which is produced by quinine, or equally rarely it causes an irritable state of the bladder. All these conditions arise from personal idiosyncrasy to the remedy.

We may next consider the pathological states that produce what may be called an artificial idiosyncrasy — that is to say, the states which render the action of the drug useless or harmful. These are middle-ear disease, which is usually marked and aggravated in both subjective and objective symp-

toms by the use of quinine, since this drug causes congestion and even hemorrhage into the tympanic cavity; epilepsy, which is usually made worse by this drug; gastritis, in which state the mucous membrane of the stomach becomes irritated by this remedy; meningitis, in which the membranes of the brain are still further congested by the action of quinine; and finally irritation of the genito-urinary tract in children, which is often exaggerated by the influence of the alkaloids of cinchona.

IRRIGATION OF THE BOWEL IN SUMMER DIARRHEA.

So valuable do we believe this method of treatment to be, particularly in the case of children suffering from the condition called cholera infantum, that we may be permitted to reiterate our views concerning it in this issue of the GAZETTE, although we are well aware that we have called attention to it editorially in previous years.

In obstinate cases, two individual things should be done for the relief of the child, namely, the use of irrigation of the large bowel by plain water, normal saline solution, or water containing a small amount of boracic acid; and second, and even more important, the use of milk should be stopped for a period of twenty-four or thirty-six hours, and it should be supplanted by the use of beef juice and water to allay thirst, to provide albuminoids, and yet at the same time to arrest the fermentation processes which are going on in the alimentary canal, and which are represented by the curds of milk which are found undigested in the stools which are passed.

Our attention is once more called to this matter by an article by Dr. Hubbard, of Boston, in the April number of the *Archives of Pediatrics*. The temperature of the solution which he employed varied from 89° to 90°. The child was placed in the lithotomy position; the catheter, free from air and full of the irrigating fluid, was gently inserted into the bowel as high as possible, and the syringe held about two feet above the baby.

Ordinarily about one quart of liquid may be used, and if there seems to be any tendency to its retention, an escape tube can be inserted alongside of the entrance tube. By this means the bowel is cleansed, the temperature is lowered, the blood is sent from the congested colon to the peripheral portions of the body, and great benefit results to the child, for often a peristaltic wave is set up which cleanses the bowel even above that portion of it which is reached by the injection.

Dr. Hubbard points out that seven out of ten babies which received this method of treatment had no rise of temperature the next morning, and of fifty-two other cases not so irrigated, fifty nine per cent had a temperature. So far as we know there are no contraindications to the employment of this method of treatment, provided a fountain syringe is held sufficiently low to produce a gentle flow of liquid into the bowel, and not high enough to produce too much hydrostatic pressure, which, if it is slightly excessive, may cause griping, and if it is very excessive may cause damage.

THE VALUE OF THE TRANSFUSION OF SALT SOLUTION IN THE TREATMENT OF PUERPERAL ECLAMPSIA.

The THERAPEUTIC GAZETTE has contained from time to time interesting editorial and progress items dealing with the value of hypodermoclysis by intravenous injections in various conditions of toxemia, and it has been pointed out that frequently life can be saved if the physician will resort to this simple, yet efficient, method of treatment.

Our attention is once more called to this matter by an article published by Dr. Allen in the *American Journal of Obstetrics* for May, 1899, in which he reports a series of cases which were treated in the manner mentioned. After detailing the various instances in which he employed it, he asks us to consider the advantages of this method as compared to others which are commonly employed, and then proceeds to discuss briefly the generally accepted theories in regard to the pathology of this condition.

In regard to the treatment by veratrum viride, he does not think that it is either rational or very valuable, and believes that in giving it in the full doses which are needed we are putting more poison, although of another kind, into the system of the patient. So, too, with chloroform, he does not think that it is generally an advisable remedy. Pilocarpine he naturally and justly condemns, but he believes that morphine is a useful adjuvant to chloroform.

In regard to venesection, it is evident that this method of treatment is applicable chiefly in those women who are full-blooded and extremely plethoric, and contraindicated in

those who are already anemic and lacking in blood.

Taking it all in all, Allen believes that the best treatment is as follows: In the pre-eclampsic stage, when the premonitory symptoms, consisting of epigastric pain, frontal headache, and disturbance of vision, have set in, we should thoroughly purge the bowels, stimulate the skin by warm baths, order a milk and water diet, and give nervous sedatives. At the same time the urine should be examined quantitatively to determine the amount of urea which the woman has eliminated, and if by chance this amount is scanty it should be increased by the use of diuretics, and we may add in addition by the employment of the hot pack.

When the eclampsia has already begun and delivery has been accomplished either by nature or by the aid of the physician, a hypodermic injection of morphine should be given at once, and this should be followed by forty grains of chloral and one drachm of bromide of potassium injected into the bowel. Owing to the convulsions, it is necessary to anesthetize the patient to accomplish this injection and to cause its retention, and for this purpose chloroform is by far the best anesthetic. It is absolutely necessary of course to bring on labor at once. Dr. Allen believes that a moderate amount of postpartum hemorrhage under these circumstances is advantageous, particularly if the woman has not already been bled, and also that about one and a half pints of salt solution should be injected under each mammary gland immediately after delivery, and in many cases on a number of consecutive days, in order to thoroughly wash the system of poisons. It is also advisable to keep the bowels moving actively.

The only advice which we have to add to that of Dr. Allen is that in carrying out the other important details we should not wait for delivery to be accomplished, but if possible administer the salt solution hypodermically at once, in order that it might rapidly produce its good effect. In some cases the influence of these injections is simply amazing.

THE TREATMENT OF ACUTE INTUSSUSCEPTION.

As to the frequency of intussusception as a cause of acute intestinal obstruction, medical literature, especially in modern times, abundantly attests. Thus, in a total of 1652 cases of intestinal obstruction, hernia excluded, collected by Leichtenstern and Bryant, 657, or approximately forty per cent, were due to intussusception. All authors are agreed that it is most frequent in the first year of life. Out of Leichtenstern's 593 cases, 131 occurred before the age of twelve months, and the great majority of these were in the fourth, fifth, and sixth months. After the fifth year intussusception becomes comparatively rare, till the fortieth or fiftieth year, when it again increases in frequency of occurrence.

The onset of the affection is sudden; the pain is violent and intermittent. Bloody mucus is passed from the bowel, often with much straining, and there is commonly felt a tumor on abdominal palpation, which varies in size and consistency from time to time, and has an erectile or vermiform motion. Vomiting, tympany, constitutional symptoms, and absence of fecal evacuations are common to this as to other forms of intestinal obstruction.

In infants, paroxysms of screaming and writhing, followed by intervals of repose varying from a few minutes to several hours, associated with blood-stained evacuations from the bowels, should always suggest intussusception. The palpable tumor is absent in about half the cases.

As to the treatment of acute intussusception, a clearer recognition of the admirable results to be obtained by prompt surgical intervention has in the last few years been so effective that the mortality of this at one time almost surely fatal disease is steadily dropping to about that of strangulated hernia.

Martin and Hare (Fiske Fund Prize Dissertation, No. 40, 1891), as the result of a statistical and experimental study, wrote as follows:

"The pathology of the disease teaches us that disinvagination becomes more difficult in direct proportion to the length of time which has elapsed since the onset of symptoms; hence every hour diminishes the chances of success. Whatever the age of the patient or the seat of the trouble, provided the case is not of such long standing that tight adhesions have probably made reduction impossible, or strangulation has produced a partial necrosis, ether should be administered to its full surgical extent, producing complete relaxation of the muscular system; by means of a fountain syringe *hot* (105° to 180°) .7 per cent saline solution should be *slowly* (four ounces to the minute) forced into the rectum under a pressure of not over two pounds to the inch (elevation

of the irrigating bag four feet), the liquid being retained by a shoulder upon the injection pipe, readily made by wrapping it with a narrow bandage; the abdomen should be thoroughly kneaded, the manipulations being so planned as to encourage disinvagination. This treatment should continue for thirty to forty minutes, the pressure being gradually increased by raising the bag till a pressure of not over eight pounds is produced, and may, if the tumor does not disappear, be combined with inversion and shaking.

"This trial at forced reduction must be *thorough* and *final;* there should be no idea that it is to be repeated with more care and attention to detail. If it fails, the surgeon must proceed to an abdominal section for the purpose of accomplishing disinvagination."

In the last two or three years the general feeling of the profession has been to limit the amount of pressure employed in injections to not more than two pounds.

Heaton (*British Medical Journal*, April 22, 1899), in recording four cases of operation, with three recoveries, points out that the general mortality of the disease under all forms of treatment up to within a few years ago was as high as seventy or even eighty per cent. In endeavoring to arrive at the true mortality of the various measures employed for the relief of the disease, he collected records of 104 cases of intussusception from hospital reports. Of these, thirty-eight recovered and sixty-six died, giving a mortality of over sixty-three per cent. The abdomen was opened in fifty-five cases out of the 104, generally after failure by injection or inflation to reduce the intussusception. Because of a lack of detail in the reports, eight of these cases are excluded. Of the remainder, twenty-three were reducible at operation; eight died, and fifteen recovered, giving a mortality of 34.8 per cent. Twenty-four cases were irreducible at operation; of these twenty-two died and two recovered, giving a mortality of 91.7 per cent.

Gibson's statistics, based on 239 cases, indicate a mortality of thirty-eight per cent for the reducible cases, and of eighty-two per cent for the irreducible ones when submitted to abdominal section. These latter statistics are, however, open to the objection that they are compiled from cases reported in the journals, and hence in the main successful ones.

It is noteworthy that the disease was extremely fatal in children under one year old, the cause of death being usually shock or exhaustion. Gibson's table apparently shows that the percentage of cases in which the intestine was irreducible varied directly with the number of days of illness.

The conditions for success in treating this affection are obviously prompt diagnosis and immediate surgical intervention. The true mortality of operative cases is certainly at the present day much higher than that given either by Gibson or by Heaton. That it will soon be lowered to figures much below those given is clear to those who have followed the trend of modern writing upon this subject.

THE DANGERS OF DELAY.

Upon this well-worn topic there has been so much written in recent times that further insistence upon the prompt application of the most efficient therapeutics of a given disease, whether this be operative or not in the case, would seem unnecessary; yet it is still the almost daily experience of every surgeon to see cases of incurable disease, or of irremediable deformity, which would have been within easy reach of complete cure but for the apparently inexplicable delay of the physicians to whose care these cases were first entrusted in applying the obvious treatment. Therefore, Robson's address upon this subject is by no means superfluous. He does not deal with the more obvious dangers of delay in surgery, such as waiting for the formation of pus before incising a felon, but considers groups of cases, in which his experience has shown him not only that delay in treatment is dangerous, but that serious delay even in these enlightened days is the rule rather than the exception. The grouping of tuberculous affections he first considers, and he holds that if complete rest were insisted on in the early stages of the joint cases, whether spine, hip, knee, elbow, or other joint, a complete and permanent recovery would occur in probably over ninety-five per cent of the cases. It is under such circumstances that the diagnosis of growing pain or rheumatism leads to a neglect of treatment until the time for complete restoration has long passed. In tuberculous peritonitis the curative effect of abdominal incision and drainage is so well attested, and the operation is one attended by such slight risk, that it should be advised before the period of extensive and irreparable degeneration has been reached. An incision only large enough to admit the finger, performed under cocaine

anesthesia, is all that is required, the procedure occupying only a few moments.

The importance of early recognition and removal of cancer has, perhaps, been insisted upon more than has early intervention in any other surgical disease The evidence as to the complete curability of cancer by an extensive operation performed in its earliest stages is conclusive. Yet still our hospitals are filled with patients who have long passed this favorable stage.

In regard to appendicitis, Robson holds that the appendix should be removed without delay, since before suppuration, perforation, or gangrene has occurred, or before firm adhesions have formed, the operation is practically unattended by risk; moreover, it can be accomplished through a small incision, with separation rather than division of the muscular fibers.

Cholelithiasis is another condition which too often receives an expectant treatment. Many of the cases in which an ultimate and necessary operation is extremely difficult and dangerous, because performed on patients in the last stages of illness, of deep jaundice, who suffer from infected cholangioitis, persistent vomiting, or exhaustion, would, if performed at an earlier stage, have been quite simple, with the chances of recovery at ninety-nine per cent. Among the dangers of delay in these cases, not the least is that of malignant disease. Robson states that he has operated on forty cases of cancer involving the gall-bladder, or some part of the biliary apparatus, and that he must have seen quite double this number of cases where he did not advise operation. The association of gall-stones with cancer is so common that the etiological relation of lithiasis can scarcely be doubted; this, then, is an added reason for early operation for gall-stones. Robson's views on this subject are expressed as follows:

1. Seeing that statistics from various countries and by many observers agree in showing the frequent association of gall-stones and primary cancer of the gall-bladder and liver, it is desirable that cases of cholelithiasis should be submitted to surgical treatment at an earlier stage than has hitherto been the custom.

2. In all cases of tumor of the gall-bladder, even if unaccompanied by symptoms, an operation should be advised, and the obstruction, usually a calculus, should be removed.

3. If these rules were followed, primary cancer of the gall-bladder and extension to the liver would probably be less frequent.

4. If early operation in cases of tumor of the gall-bladder were followed out, even if cancer had commenced, it could be caught in an incipient stage, when a cure by cholecystectomy, or even partial hepatectomy, might be reasonably hoped for.

5. An exploratory operation, even in a patient seriously ill, with a localized tumor in the gall-bladder region, is worth advocating, though malignant disease be feared, in the hope that the disease may be inflammatory, and so capable of relief.

6. If there are any secondary nodules in the liver, or if adjoining viscera are invaded, the operation had better be terminated as a simple exploratory one.

Robson expresses the hope that the time is not far distant when it will be more fully recognized that though cholelithiasis, so far as its course and early treatment are concerned, is distinctly a condition for medical treatment, it is both unjust to the patient and unfair to the surgeon to continue medical treatment until serious complications supervene, or the patient is almost, if not quite, past relief, before surgical treatment is advised.

In perforated gastric ulcer, at least five out of six patients can be saved by immediate operation. If a diagnosis cannot be made at once, it is much better to make a small incision in the middle line. If the gastric ulcer has perforated, an odorous gas will escape in opening the peritoneum. The opening need not be larger than just sufficient to admit the finger, and the whole exploration need not occupy more than a few minutes, it being done under cocaine, if there is objection on the patient's part to general anesthesia. In every case where perforation is in question the surgeon should be called in without delay, and he should come prepared to operate at once if there is perforation, or to explore within twelve hours if there is doubt.

The same general procedure should be adopted in perforating typhoid ulcer. Moreover, the perforation is usually in the neighborhood of the cæcum, and the seat of the disease can be reached at once by an incision there, thus avoiding the danger of a prolonged search and the exposure of the abdominal contents, so that a rapid operation can usually be done if performed early. One may reasonably hope to save about twenty-two per cent of cases of typhoid where intestinal perforation has occurred. Since from ten to twenty per cent of the fatalities in typhoid fever arise from perforation, it would seem wise to call in a surgeon the moment abdominal symp-

toms occur, especially if there be pain and tenderness in the right iliac region.

Dilatation of the stomach and stricture of the pylorus are both amenable to operation, and are customarily treated for years by drugs, the effect of which is at the best simply negative. Vomiting some little time after food, with thirst, and rapid emaciation, should lead to examination for dilated stomach. If, together with the stomach splash and other well known signs, there is noted peristalsis, the chances are greatly in favor of a narrowed pylorus, which in many cases is due to some simple or removable cause.

In regard to intestinal obstruction, Robson holds that every such case should at once be subjected to surgical consultation. The surgeon should be prepared to interfere as soon as the ordinary remedies have failed, and before the system has become poisoned by the fermenting contents of the gut above the seat of obstruction. Moreover, at an early stage the diagnosis of the nature and seat of obstruction can be more easily made out. Further illustrations as to the importance of prompt intervention are drawn from ovarian and uterine tumors.

It cannot be said that Robson has advanced any new arguments or more forceful illustrations of the danger of delay in surgical practice than have been presented hundreds of times before, yet his insistence upon this point has its value. The motives of delay are, however, rapidly becoming less strongly operative, and mainly through the admirable work done by such men as Robson. Undoubtedly the chief reason for delay in calling in the services of a surgeon is dependent upon the practitioner's mistrust of his ability to help. This mistrust dates back to the time when wounds went badly, when cancers invariably recurred, when openings of the peritoneum were almost invariably fatal, when every operation was attended by hemorrhage, and more or less marked shock. It is also accentuated by the fact that patients were too often confided to the surgeon's care only when their condition was hopeless. The mistrust is based on ignorance of the capacity of the modern trained surgeon.

Another reason for delay is ignorance of the first principles of diagnosis. This reason is becoming rapidly less operative with the advanced standard of medical education.

Still another reason for delay is a profound belief in the *vis medicatrix naturæ*, a belief fostered by the often extraordinary results following the cessation of an ill-judged system of therapeutics.

Sometimes the delay is due to the carelessness in the observation of symptoms on the part of the patient, or to a persistent concealment of such symptoms as may in the judgment of the patient be deemed by his professional adviser to require treatment at the hand of the surgeon. All these motives for delay are being steadily undermined by modern thorough medical education. It is but a few years since that the intelligent laity and doctors refrained from consulting the oculist in the majority of eye affections, because of the popular belief that these gentlemen did more harm than good. It is to be hoped that the distrust of the surgeon will pass as completely as has the lack of confidence in the ophthalmologist.

Reports on Therapeutic Progress

ON THE RELATION OF GOUT TO RHEUMATOID ARTHRITIS.

Dr. WILLIAM EWART, of London, in discussing this subject in the *Medical Press ana Circular* of March 8, 1899, begins his statements as to treatment by saying that he does not intend to enter fully into a description of the treatment of gout and rheumatoid arthritis, but only so far as it bears upon the relationship between the two diseases.

In the first place, it may be stated that the treatment which is most beneficial in pure gout is that which is most detrimental for the worst cases of that form which we may term "pure" rheumatoid arthritis, to which colchicum and alkalies would be almost poison, and low living the sure means of aggravation.

The relation between the two forms of treatment is thus one of direct opposition as regards their specializations. Yet there is a considerable basis common to both. Hygiene is essential to all classes of sufferers, but specially to those afflicted with chronic ailments; and internal hygiene is more particularly needed by all sufferers from joint trouble, whether this be gout, rheumatism, or rheumatoid arthritis—in addition to the essentials of a wholesome dietary.

Our difficulties begin with the management of the mixed forms. Where the indications are not absolutely clear our action is of necessity somewhat tentative. In most of the cases to which reference has been made there is, besides the rheumatoid basis, a suspicion

of the gouty element. Dr. Ewart believes that in many of these cases the best treatment is to treat the rheumatoid arthritis as thoroughly as this may be wisely done, and to be sparing with the more energetic remedies for gout. Our most important duty seems to be not to add in the slightest way to the depressing conditions under which the rheumatoid patient is suffering. A relatively lesser evil would be to temporarily increase his gout. But even this need not occur if our treatment be happily conceived.

There is one direction in which the treatment of both affections can be carried out with safety and benefit almost irrespective of their special characters—that is, the local measures of relief to the joint. We are now provided with additional means, and most effectual ones, of local treatment. It had been long noticed that the old-fashioned balnear treatment, which is often most serviceable in gout, led to very imperfect and often detrimental results in rheumatoid arthritis—that is, the treatment of the patient by prolonged immersion in a hot bath. The same debilitating effect would result in some of the mixed varieties of rheumatoid arthritis in spite of their gouty complication. The general balnear treatment had of late years been abandoned in all such cases for the more local measures of steaming, hot douching, and massage, applied more especially to the joints affected, and our chief success had hitherto been derived from this method. We are now provided with various means of treating the joint affected by dry heat up to a very high temperature. The careful application of these new methods graduated to each case will enable us to feel that a great deal is done for the joint, whilst no possible harm is suffered by the patient, whatever be the stage of his articular complaint.

Dr. Levison, in a most interesting article, has provided us with suggestions as to the diagnosis between rheumatoid arthritis and gout by the *x*-rays, and as to the treatment of the gouty joint by the electrolytic method. Thus electricity, which has been long known to be of considerable use, whether in the shape of the electric bath or of the constant current directly applied to the limb in cases of rheumatoid arthritis, has now found a yet more direct application in gout, since it addresses itself to the removal of the material which is the source of local irritation and pain.

Meanwhile the internal treatment of such cases may be carried out on lines conformable not only to some of the obvious indications, but also to theories which are in some respects divergent. The abundant use of water as the means of accelerating excretion of waste products and of all forms of toxins, and assiduous attention to the activity of the bowels, are equally desirable in gout and in rheumatoid arthritis, and fulfil the indications claimed by the neural as well as by the humoral theory.

In mixed cases occurring in mature age it may be best not to complicate the position by any vigorous tonic treatment, nor even by the iodide of iron, which has found so much favor since first advocated by Sir A. Garrod, and which is admirably suited to the uncomplicated form witnessed in children and young adults. There may nevertheless be room for the administration of arsenic in small doses and of sulphur, in addition to the purgatives. These have also been largely prescribed by the same authority before the more recent ideas concerning the septic origin of rheumatoid arthritis had been set forth. It may be said for arsenic that in addition to its antiseptic properties, it must approve itself to those who regard arthritis deformans as conditioned largely by a disordered nervous function.

Those are some of the general lines upon which doubtful cases may be treated safely, and with the promise of much benefit.

Reference has been made to the acute and painful forms of rheumatoid arthritis, frequently monarticular, in which an inherited gouty proclivity or an acquired tendency to gout may be a factor. As previously suggested, treatment comes to the aid of diagnosis in these cases so apt to puzzle us. Antirheumatic remedies and methods of treatment are absolutely harmful, and there is a positive intolerance—though this is not always thought of by those in charge, nor even often realized by the patients themselves—for the ordinary heat of the rheumatic bed. Let this influence be removed and they are immediately benefited. Dr. Ewart regards this variety of complaint, long ago described as an affection *sui generis* and successfully treated by Dr. Fuller, as a special form of rheumatoid arthritis, of a vasomotor type; and in treating it he is impressed with the necessity of addressing the treatment to the vasomotor system. The best way to do this is the application of heat or cold. Whilst we had remained restricted to the former methods of

thermal treatment, treatment by heat had often failed, and the application of cold had been found to be the only successful method in some cases, after trying in vain the use of hot spongings or even of the hot-air bath. Now that different methods are available it is conceivable that cases of this kind, although refractory to ordinary heat, may be relieved by the heat cure and derive great advantage from the high temperatures generated by electricity and by other means, as they certainly do from cold applied locally.

As regards the general and medicinal treatment of this variety, it must vary with the individual characteristics of the patient, but in the average case most advantage would be gained by our disregarding indications derived from a mistaken diagnosis of rheumatism, and by our not being deterred by the gouty family history or personal antecedents from endeavoring to raise the general strength of the patient. This practical view would also meet the indications suggested by any toxic theory which might be entertained by some in preference to the neural vasomotor theory.

The antiseptic treatment by the internal administration of creosotes, phenols, and naphthols, recommended by Bannatyne, and the local germicidal intra-articular treatment by means of iodoform, carbolic acid, and other germicides practiced by Max Schüller, are too important to be passed altogether unnoticed, but they are specially intended for the infective form of the disease, and they have not, so far as the author knows, a direct bearing upon the subject of this discussion.

Lastly, we come to the question of diet and of alcohol, the answer to which is foreshadowed in Dr. Ewart's preceding remarks. The rheumatoid patient needs, above all, to be fed, and wine suits him well; but if he should turn gouty we cannot disregard his gout. It is preeminently in this connection that the practical purpose of this discussion is revealed. How to diet the patient and whether or not to allow him alcoholic stimulation are points not to be safely decided except on the strength of an accurate diagnosis, not only of the general character of the case, but of its special phase. In doubtful cases there is probably more rheumatoid arthritis about the patient than gout, and Dr. Ewart is in favor of the policy which he has indicated in his remarks on treatment, of running the risk of a slight gouty exacerbation rather than of incurring the reproach of intensifying the depression and debility inseparable from the rheumatoid state. The gouty element, if present, may however restrict the choice of stimulants to those more suited to gout; whereas in uncomplicated rheumatoid arthritis, particularly that of the young, the prevailing anemia calls for a supply of the red wines. In both cases the delicacy of the digestion has always to be borne in mind, and it is equally essential that the diet should be easily digestible, and that it should be sufficiently varied and nutritious.

TREATMENT IN THE EARLY STAGES OF ACUTE APPENDICITIS BY SALINE APERIENTS.

The treatment Dr. MAYLARD proposes, in the *Glasgow Medical Journal* for March, 1899, in the early stages of acute appendicitis is as follows:

1. Give copious warm soap and water enemata.

2. Administer hourly until the bowels move freely small teaspoonfuls of sulphate of magnesium dissolved in about two wineglassfuls of warm water.

3. Apply hot linseed poultices to the right iliac fossa.

4. Feed on whey, chicken tea, meat jellies, etc.

THE INDICATIONS FOR CHLOROFORM DURING LABOR.

Under this title BACON, of St. Paul, writes a paper in the *Northwestern Lancet* of March 15, 1899. He points out that the sanguine diathesis gives us patients who are usually large and florid, with muscles that are well developed. Arterial tension is high, and as age advances the heart has a tendency to hypertrophy and to fatty degeneration, and the muscles become inelastic. Young patients of this diathesis bear chloroform well, but it should be used less freely as age advances, unless hypertrophy of the heart and weakened blood-vessels are present.

Strumous patients are defective in nutrition; the bones are frequently irregular; they have little or no adipose tissue and are irritable, with weak muscles. A few drops of chloroform at infrequent intervals and during a pain will give these patients much comfort. Fortunately the fetus is usually small, and the few drops necessary to relieve irritability will not increase the duration of labor.

Dark, despondent women of the bilious diathesis are slender; their tissues are dry

and inelastic; they are inclined to be whining, with little fortitude in pain. In these cases begin chloroform early in small regular amounts, and the patient will soon become courageous and patient and will eagerly follow instructions and assist the uterine contractions. These patients will insist that chloroform increases the strength of their pains, and the change in their demeanor will seem to corroborate their statement. The bilious frequently merges into the sanguine, and we have large, steady, persistent people with marked tendency during labor to rigid os and perineum. When the bilious merges into the nervous diathesis, we find active women but great sufferers. We find many of our chronic invalids of this type. Both of these classes are benefited by the use of chloroform from the early stages of labor until the end; even small regular amounts, sufficient to relax spasmodic muscular action and relieve keen pain.

The bilious and lymphatic combination presents to us a helpless creature whose natural weakness is intensified by despondency. She has heard that chloroform makes her labor easy, and she insists upon having it, and having it early and in large quantities. To refuse is to add panic to fright, but the difficulty is readily overcome by liberal inhalations of alcohol. Chloroform should not be administered in normal labors with this type.

The sanguine diathesis is frequently blended with the nervous and bears chloroform well. When the strumous is blended with the nervous, chloroform can be used freely. When the strumous is merged into the sanguine chloroform can be exhibited freely, but should be watched more closely than in the nervous diathesis.

When valvular lesions of the heart are present, the increase in the volume of blood and the increased engorgement of the vessels that occur during the uterine contractions become a source of danger. Without chloroform the heart's action becomes labored and irregular and the patient's distress is great, but immediately upon its exhibition the vasomotor dilatation allows the patient to bleed into her venous system and the vigor of the uterine contractions is lessened. The excess of work thrown upon the heart is removed, and the relief to the patient is so evident that Bacon would as soon think of approaching one of these cases without aseptic precautions as without chloroform.

When disease of the blood-vessels is present chloroform should be administered to relieve straining and lessen the danger of rupture.

Albuminuria is benefited even though eclampsia is not present, when the albumin is due to reflex irritation or increased arterial tension, and under its influence certain French and German investigators claim that the amount of albumin excreted is diminished and sometimes disappears.

When eclampsia occurs before delivery the convulsions are controlled, the exhaustion and the danger to the heart and blood-vessels are averted, and the uterine spasms are checked, allowing normal contractions to occur.

In certain cases the pain is of such a character that labor is delayed, and chloroform at such times hastens delivery and prevents some dangers.

In primiparæ when pains are severe and the os dilates slowly, the patient becomes worried and weary and nervous irritability and exhaustion follow.

It sometimes happens that intense suffering inhibits proper contractions, and inefficient pains result.

In abnormal uterine contractions pain sometimes becomes pathological in intensity, as seen frequently in hysterical women.

During the second stage, particularly if it is long continued, the vulva becomes swollen and irritable, and if the pains are severe the patient frequently cannot be induced to strain.

In all of these cases chloroform given to the obstetric degree takes the edge off from the pains and gives the patient courage; at the same time the intervals between pains are lengthened and the patient obtains rest. Chloroform should be used to control tetanus of the uterus, spasms of the cervix, and to relax a rigid perineum if due to reflex irritation, but it should be borne in mind that a rigid perineum is frequently but an indication of weakened uterine action. In precipitate labor, if the rigid condition of any portion of the birth canal makes tearing probable, chloroform should be administered in quantities to lessen uterine force as well as to relieve pain.

Forceps are applied usually because of uterine inertia, and chloroform should be used to relieve sensibility and allay reflexes, but the tendency to flood should be borne in mind and its use discontinued before delivery.

During version, anesthesia is required for all sensitive patients. Without it the uterine

muscles become tense as the hand pushes in, and sometimes the contraction becomes continuous; besides, the pain is intense and struggling frequently interferes with the necessary manipulation. It should be discontinued as soon as turning is accomplished.

It should be omitted only when the abdominal and uterine muscles are insensitive and when the cervix is dilated and flabby or when contraindicated by disease. Chloroform is useful in all cases where it is necessary to pass the hand into the uterus to change presentations.

In foot and breech presentations it is useful in unruly patients, but in the main the benefit as an anesthetic is doubtful, for the cooperation of the patient and the uterine pains are necessary assistants.

In all surgical procedures during labor chloroform should be used upon the same indications which govern its use in other cases.

ANTISTREPTOCOCCIC SERUM IN THE TREATMENT OF PUERPERAL SEPTICEMIA, SEPTIC CELLULITIS, POSTOPERATIVE SEPSIS, AND ERYSIPELAS.

ROBINSON writes in the *Virginia Medical Semi-Monthly* of March 10, 1899, of his experience with this serum. After detailing his cases he says it will be noted that with the exception of three cases of the puerperal class, the attacks came on within three days following delivery. Such a history points strongly to the streptococcus as the cause of the septicemia. When there is profuse discharge we may suspect sapremia; still there is often a mixed infection, and we need not hesitate to use the antistreptococcic serum for both the possible benefit and the diagnostic advantage. The results in the puerperal cases are strongly suggestive.

The postoperative cases were no less striking in their response to the serum. The septic cellulitis cases and the gunshot wound demonstrated the value sufficiently positively to encourage further trial.

The erysipelas cases were too positive to be questioned. Dr. Robinson says he grants, from a strict scientific standpoint, that his report may have little significance to microscopic investigators, but to the great body of busy practitioners whose souls are deeply stirred by these perplexing cases, and who have no microscopical advantages or conveniences, the antistreptococcic serum will be most gladly welcomed.

Touching the doubt of all things, without microscopic proof, he says it appears criminal to bar the profession from the use of a remedy pregnant with such possibilities of relief.

In all save his first case Parke, Davis & Co.'s serum was used.

REMARKS ON THE DESIRABILITY OF A MORE CAREFUL STUDY AND EXTENDED USE OF HYDROTHERAPEUTICS.

Dr. PUTNAM, the well known neurologist of Boston, asks the following question in the *Boston Medical and Surgical Journal* of March 9, 1899: Is a "shock," from a sudden application of cold water, useful or objectionable? The latter view is often maintained, both by patients and physicians, but the former is correct, provided only that the shock is proportioned to the habits and the capacity for reaction. Patients are apt to dislike the "shock" of cold water, and if they are feeble or nervous it may, if severe, frighten or fatigue them. For this reason, when an unfamiliar method is first used the application should be as warm as 85° to 90°. This will feel cold if the skin has previously been warmed to 100° or higher. On the other hand, the common practice of letting cold water run gradually into a previously hot bath, so that the temperature is slowly lowered and "shock" avoided, is an objectionable one, and much less likely to be followed by a good reaction than a more sudden change, especially if the latter is associated with smart friction, as in the case of the drip-sheet or forcible cold affusion given by another person. It is not easy for a patient to make a thoroughly satisfactory cold application unaided except by an immersion bath, since otherwise, at the best, only half the body can be bathed and rubbed at one time. The immersion bath at low enough temperatures to be thoroughly stimulating is very refreshing to vigorous persons who are thoroughly habituated to it, but less safe for feeble persons. If the latter must take their bath unaided, rubbing with a large, dripping-wet towel is perhaps the best method.

Hot baths, at temperatures considerably above that of the body, have primary effects similar to those exerted by cold baths, but secondary reactions are liable to occur, leaving the skin pale and cool and the arterial

tone low, and, moreover, the skin is for a time after them abnormally sensitive to slight cold. It is risky, on these accounts, to take hot baths at bedtime, because the primary heat of the skin leads the patient to underestimate the amount of clothing which will be required later, and he may wake to find himself chilled.

These dangers are diminished if sufficient time is taken to allow of complete cooling before going to bed, or if the hot bath is followed by a dashing or rubbing with cold water. Of course there are cases, however, where the sedative action of a prolonged warm bath is very useful. Massage given during warm baths is useful for elderly people with arteriosclerosis (Jacobi).

It is a mistake to suppose that shivering is necessarily a sign that the body is becoming chilled to an objectionable degree. Shivering frequently occurs when one rises from bed on a cold morning, and yet wholly disappears, together with the sense of coldness that accompanies it, after a plunge into very cold water. Even blueness of the finger-tips is not necessarily a danger sign, since it is usually due to local changes in the cutaneous circulation and not to weakness of the heart.

Children do not require as low temperature as adults to develop such a degree of reaction as can be expected from them, and do not stand severe cold as well.

Where the reaction on the part of the vasomotor system is to be limited to a small portion of the body, lower temperatures and more prolonged application can be used than where the whole surface of the body is to be exposed.

Where drip-sheets, or sheet-baths, or wet packs are to be used, coarse linen sheets or damask table-cloths are better than cotton sheets, as being more absorbent and affording better surfaces for friction.

The mechanical impact of a stream of water delivered under high pressure in the form of a douche adds greatly to the stimulant effect, and insures a better reaction. Nevertheless, a feeble patient has to be accustomed gradually to high pressures as to low temperatures, and at first relatively short applications are necessary. In a well-appointed institution greater and readier variability, and thus better results, can be obtained than in a private house.

Especial caution is necessary in applying baths tending to produce much reaction, to elderly persons, or to any person with brittle arteries or with disease of the heart.

In the discussion that followed Dr. COGGESHALL said it had always struck him, in watching the advantage which prominent men, of the class who are our consulting physicians, have over the general practitioner, that it was quite as much in the wider range of their resources in therapeutics as in their superior ability in diagnosis, and it seemed to him that one of the greatest difficulties that the general practitioner labors under is that he has very few medical resources beyond drugs, and that he is apparently unconscious—almost unconscious—of the wide applicability of other means of treatment. Drugs and surgical operations are the widest range of his therapeutic imagination, and if we are to get the best results with a great many forms of chronic diseases especially, and he thought also with a great many acute diseases, it seemed to him that we ought to pay more attention to other means of treatment, and among those in his short experience he had seen none he should attach more importance to than hydropathy. It is commonly thought of as a process of giving people baths, and that there is a difference of temperature. We may give a hot bath or a cold bath; but any one who has studied the work of Baruch in New York or Winternitz in Vienna, and many other eminent men in Germany and other parts of Europe, must realize that hydropathy is a much more complicated subject than the mere question of giving a bath and giving a bath hot or cold. If physicians did realize the amount of benefit that accrues in a wide variety of cases from water treatment in various forms, they would take more interest in it. The objections to it with the general practitioner are of course obvious and serious. It would take a great deal of time to study the details of treatment. It would be like having to learn a whole materia medica over again almost, and it requires more time to plan the treatment for an individual case than to write the most carefully considered prescription; and yet he said he could not help believing, from what he saw abroad, and what little opportunities he has had for personal experience since he has been in practice, that the results would repay the additional time and trouble which the careful carrying out of such treatment would require. Then there is the expense, which is, for the finer details of such treatment, out of the question for the vast majority of private patients. He had been able in the case of one private patient to get him to put into the house some of the appliances re-

quired for that case, and he said the patient has always felt since that, although he expended some hundreds of dollars on them, he got better money's worth out of it than out of his physician's prescriptions. That, however, would be a very exceptional case.

The only way in which we can carry this treatment out successfully would be to get an institution which would undertake to provide all the apparatus required for the complete system of hydropathy and carry out the treatment of cases under the direction of physicians, perhaps with the assistance of consultation advice as to the treatment in the case from some one who had had a large experience in that kind of therapeutics.

Dr. Coggeshall said another reason why an institution would be an important, in fact an absolute, necessity to any general use of it would be that it requires skilled assistants to apply the treatment. He had found some very disappointing results in attempting to carry it out in private families, even with the simple forms of baths and giving the most minute directions he could to members of the family. A nurse must superintend and apply the treatment throughout; and he does not think it is very easy for the patients to do it for themselves, even after they have been under the treatment some time, because one constantly wants to alter the details of the treatment in the same case.

The diseases in which Coggeshall has seen the treatment effect most good were among nervous diseases—hysteria and neurasthenia, in both of which the results appear to be excellent. Among the commoner diseases that in general practice he should think it was most valuable in, for one he mentioned many cases of organic diseases of the heart. He began to use this treatment for diseases of the heart about three years ago, and tried it on the first case with a good deal of hesitation. Now, with the great majority of cases of valvular disease of the heart he sees, he uses it with a great deal of confidence, and generally the results have justified that confidence. He is sure that every case of simple dilatation of the heart is benefited by it, and cases at least of mitral disease have seemed to him, in the comparatively few he has had an opportunity to try it in, to be excellently adapted to it. In the case of the Schott treatment, of course, it includes exercise. Dr. Coggeshall had tried the exercise without the baths in a number of cases, and although he got benefit, he got much less benefit than in the cases in private practice that could afford to have a nurse come to the house and give them the baths as well as the exercise; and in one case, in which he tried the baths alone, he thought he got as good results as in the baths and exercises combined.

In acute diseases the use of baths in typhoid, of course, is familiar to all of us. He thought there was a wide divergence of opinion among physicians who have tried them, as to the benefit, and it seemed to him that a good deal of that divergence was due to the fact that the details of the treatment had not been carefully carried out. He said he remembers visiting a large hospital some years ago in which the visiting physician told him they were using the Brand treatment for typhoid fever, and he said it in rather a skeptical way, which implied that he did not get many results from it and did not expect to. Dr. Coggeshall found he was giving the baths by sponging the patients in bed. That is not Brand's treatment. It is an illustration of the laxness as to the details with which experiments in such treatment are often made. He did not get very good results, and it is thought the treatment was abandoned as the result of experiments which consisted entirely of sponging the patients with cold water. Dr. Coggeshall said he has had very little personal experience in the treatment of typhoid fever with it, but he has had experience in the treatment of two conditions occurring in acute disease which gave him a great deal of confidence in the value of simple cold bathing in such cases, and that is in the matter of convulsions occurring in children in connection with any severe or light disease, and in the treatment of delirium. The effect in delirium in pneumonia or typhoid fever has been, as he has seen it, certainly more marked than any other treatment he has ever seen attempted for it; and in convulsions of children, even in hopeless diseases like tubercular cerebrospinal meningitis, certainly the relief to the symptoms and the greater quieting, the rest, the improved action of the heart which he got from suppressing the convulsions with the cold bath, were well worth the trouble of giving it. Of course, in such cases as this, and in a case of delirium occurring in pneumonia, he found the greatest difficulty in persuading the family that the patient would not be killed by immersing him in water as cold as he wished to put him into. He had tried it in a number of cases, and had not seen any bad results.

Dr. Coggeshall supposed it was fair to class under the water treatment the application of ice-bags to the chest in pneumonia and bronchitis. That is another form of treatment he had used repeatedly, and always, it seemed to him, with some or a good deal of benefit; but if we are to get satisfactory results in such cases as those spoken of, whether in the chronic forms of diseases like hysteria and neurasthenia, or in the treatment of delirium and convulsions occurring in acute diseases, we must attend to the minutiæ of the treatment, and until we do so he thought it was not fair to draw inferences from the results. Dr. Putnam mentioned some examples of fallacies involved in reasoning about the treatment, and Dr. Coggeshall wished to mention one or two others.

He believed Dr. Putnam mentioned the fact that the temperature was not much lowered by short cold baths, and Baruch, he thought, was the first who called attention to the fact that although the temperature as taken in the mouth was lower the temperature in the rectum was not materially affected. Some physicians, in thinking of the application of cold bathing to typhoid fever, have apparently assumed that the principal value of it was as an antipyretic, and that it had the same use as acetanilid or phenacetine, except that it might be less depressing. Dr. Coggeshall said he could not believe that that was its value; in fact, as he had tried it, in cases of typhoid fever, he had found there was perhaps one-half degree fall in the rectum, although there might be a marked fall in the mouth; and he had always regarded the rectal temperature as the true indication of the fall, and the mouth temperature as a side issue, to which he did not attach particular importance. He never valued it because he thought it would lower the temperature, but because of its effects on the central nervous system and through that upon the circulation. He believed that was the true value of it in such cases, and if it did act as a nervous stimulant, if it was energetic and lasting in its effects, it was of much more significance than the mere effect on the temperature.

As illustrations of the importance of attention to detail, the speaker said he could give examples of the way in which it is often laid down in the books, that baths should be given at such and such temperature, etc, and if this is carried out by physicians who have not used it much, exactly on these lines without reference to the marked difference we find among patients in their powers of reaction, the method will fail. Two cases will differ very much in the way they will react to treatment; and the details of the packs, the douches, or whatever is being used in the case, ought to be worked out by carefully feeling one's way with regard to that individual patient. Where the reaction was not good he had never hesitated in any form of acute disease to use alcoholic stimulants before the baths, and he would always do that rather than abandon the baths in such cases; and he had found that hot whiskey and water or brandy and water before the bath obviated entirely the unpleasant effect in such cases.

One other illustration of the importance of detail he said he should like to mention was in the method of giving the baths when the patient is not in the tub—the so-called sponge baths. It had always seemed to him that the sponge was the poorest thing that could be used. We cannot get friction from it, and it is cold in a disagreeable way. It is more apt to chill the patient, whereas if rough bathing gloves were used and the cold water rubbed on the patient, instead of being sopped on with a sponge, the effect would be markedly different. One very important factor is the pressure under which the douche or spray is applied, which is independent of the matter of temperature, and that is another thing that makes it in private houses almost impossible to secure the results that can be secured in an institution suited for the purpose.

THE PRINCIPAL DIURETIC MEDICAMENTS.

MARTZ, of the Faculty of Medicine in Lyons, gives a number of prescriptions for diuretic purposes. Pills composed as follows:

> Extract of convallaria, 1 grain;
> Powdered convallaria, 1 grain.
> Make in one pill, and give a pill night and morning.

Or a syrup made of:

> Extract of convallaria, 4 drachms;
> Syrup of bitter orange, 6 drachms.
> A teaspoonful night and morning.

In other cases we may use:

> Tincture of squill, 75 minims;
> Syrup of bitter orange, 1 ounce;
> Distilled water, 3 ounces.
> One teaspoonful every few hours.

Or,

> Extract of squill, 1 grain;
> Powdered squill, 1 grain.
> Make into one pill, and give one night and morning.

Or,

Theobromine, 7 grains.

Place in one cachet, and give four a day.

Or,

Caffeine, 15 grains;
Benzoate of sodium, 30 grains;
Syrup of bitter orange, 1 ounce;
Water, 4 ounces.

This may all be taken in twenty-four hours.

Or again,

Powdered digitalis,
Powdered squill,
Powdered scammony, of each 1 grain.

Make into one pill, and give one such night and morning.

Or,

Carbonate of lithium, 7 grains;
Lemonade with carbonated water, 1 pint.

This to be drunk each day.

Or, by the bowel:

Nitrate of potassium, 30 grains;
Oxymel of squill, 6 drachms;
Milk, 3 ounces.

This is to be given by the bowel.

—*La France Médicale*, Feb. 24, 1899.

TREATMENT OF PALPITATION OF THE HEART.

LYON contributes to the *Revue de Thérapeutique Médico-Chirurgical* of February 1, 1899, a brief article on this subject. In the line of symptomatic treatment he orders absolute rest to quiet the circulation. External treatment may consist in the application of compresses wet with cold water to the precordia and spraying the skin of the chest over the heart with chloride of ethyl or ether. In other instances where an atomizer cannot be had, ether may be allowed to fall on the precordium drop by drop. Internally he prescribes the bromides in the dose of from fifty to sixty grains, thus:

Bromide of potassium,
Bromide of sodium,
Bromide of ammonium, of each 75 grains;
Syrup of bitter orange, 8 ounces.

A dessertspoonful to a tablespoonful of this may be given once, twice, or thrice a day.

Or,

Bromide of potassium, 75 grains;
Tincture of valerian, 1 drachm;
Syrup of peppermint, 1 ounce;
Water, 3 ounces.

A dessertspoonful to a tablespoonful a dose every few hours.

Or,

Monobromated camphor, 7 to 10 grains.

To be made into pills and all taken each day.

In regard to the treatment of a case in which the condition is one of erethism of the cardiovascular apparatus and hyperarterial tension, he not only prescribes rest, but orders an exclusive milk diet with the bromides and digitalis in small doses. Thus he gives

Bromide of potassium, 6 drachms;
Tincture of digitalis, 30 minims;
Distilled water, 10 ounces.

One or two tablespoonfuls may be given once or twice a day. In other cases strophanthus is of value; in others still, a pill composed as follows may be made:

Hydrobromate of quinine, 1 drachm;
Powdered digitalis,
Extract of convallaria, of each 30 grains.

Make into 40 pills, and give one from two to four times a day.

In the palpitation due to arterial sclerosis he also believes that a milk diet is useful, and he prescribes iodide of potassium associated with the bromide, thus:

Bromide of potassium, 6 drachms;
Iodide of potassium, 1 to 2 drachms;
Distilled water, 10 ounces.

Two or three teaspoonfuls two or three times a day.

In other cases digitalis in small doses is prescribed as follows:

Tincture of digitalis,
Tincture of squill,
Tincture of aconite, of each 1 drachm.

Ten drops of this may be given twice or thrice a day for eight or ten days.

In the palpitation which is due to tuberculosis, improved hygienic surroundings, absolute rest, careful regulation of the diet, broiled meats, milk, and easily digested vegetables are necessary. Tonic wines, as that of cinchona or kola, are useful. Coffee and alcohol are also to be given if needed.

For palpitation of the heart depending upon chlorosis and anemia, ferruginous preparations are required, such as lactate of iron, citrate of iron, and hydrotherapeutic procedures such as cold douches and the wet sheet. This treatment is particularly necessary in cases where there is vascular atony or spasm, and in the spasm cases small doses of nitroglycerin are of value.

In reflex palpitation due to disorder of the stomach, careful regulation of the diet and the use of gentle laxatives should be resorted to, and should the palpitation occur in women, attention should be paid to the uteroovarian apparatus, and metritis or prolapse should be carefully treated. Hydrotherapy is also useful in this class of cases.

When palpitation is due to toxic agents such as tobacco, coffee, or alcohol, the diet must be regulated, the most beneficial being the milk diet. The bromides may be given and hydrotherapeutic procedures resorted to.

In nervous palpitation, depending upon neurasthenia, the preparations of valerian are preferable to the bromides, and hydrotherapeutic procedures are very useful.

In palpitation associated with exophthalmic goitre he employs antipyrin, the bromides, and aconite, or should any evidence of dyspepsia be present he uses remedies for this condition.

THE TREATMENT OF EXOPHTHALMIC GOITRE BY SULPHATE OF QUININE.

PAULESCO, in collaboration with RAYNIER, has made certain studies in regard to the pathogenesis of exophthalmic goitre. He believes that the principal trouble in this affection is the vasodilatation which affects the blood-vessels of the neck and head. As the result of this distention we have tremor, the goitrous swelling, and active congestion of the thyroid body which produces in its turn a hypersecretion of the gland, and which has a distinct physiological action. Paulesco claims that he has employed the sulphate of quinine with remarkable results, arising from its influence in producing vasoconstriction of the vessels of the head and neck. He gives fifteen grains of it at night after supper, and again a quarter of an hour later. He states that this treatment decreases the tachycardia, diminishes the exophthalmus and the size of the goitrous swelling.—*Revue de Thérapeutique Médico-Chirurgical*, Feb. 1, 1899.

THE USE OF THYROID GLAND IN THE TREATMENT OF RHEUMATIC AFFECTIONS AND ARTERIAL SCLEROSIS.

LANCEREAUX and PAULESCO reported upon this subject to the Academy of Medicine of Paris at one of its recent meetings, and stated they believe that thyroid gland or its extract is useful in the treatment of chronic rheumatism and in the manifestations of arterial sclerosis, and also in vasomotor disturbances and in nutritional changes such as scleroderma.

In the case of a young woman who had suffered from a generalized scleroderma for two years, the results were most remarkable. The skin of the face was pigmented and had lost all its suppleness, so that the visage had became as immovable as a mask. The skin of the trunk and chest was pigmented and interfered with the movements of respiration, and there was also involvement of the skin and subcutaneous tissues in the upper extremities, so that there was difficulty of movement. Extract of thyroid gland given in the dose of seven grains a day, gradually increased in quantity as the patient bore it, produced rapid amelioration, the skin of the face becoming normal and that of the trunk more supple.

In a woman aged thirty-two years, with vasomotor disturbances in the extremities, similar treatment was instituted with advantage. When this patient was exposed to cold or suffered from emotion the extremities became exsanguinated and bloodless, and at times profuse sweating and salivation was present. Under treatment these symptoms entirely disappeared.

In a man of thirty-six years, suffering from chronic rheumatism with arterial sclerosis and high arterial tension with hypertrophy of the heart and sclerotic kidneys, thyroid gland given in progressively increasing doses did much good. The pains in the joints, the osteophytes, and the trophic troubles disappeared; at the same time the arterial tension was lowered, the polyuria and albuminuria decreased, the heart's action was quieted, and an arterial bruit disappeared.

Equally good results were obtained in a man of forty, who was suffering from general arterial sclerosis. — *Revue de Thérapeutique Médico-Chirurgical*, Feb. 1, 1899.

TREATMENT OF MOVABLE KIDNEY.

The *Archives of Pediatrics* for March, 1899, asserts that the treatment of movable kidney is not entirely surgical. In nearly every case some medical treatment is indicated, and in many cases no surgical treatment is required. When the affection, according to Comby, is latent or well borne, when the pains are moderate or intermittent in character, rest and an abdominal belt will suffice to relieve. Bandaging rarely succeeds on account of the great mobility of the displaced kidney. A flannel bandage wound several times round the body, and supporting the entire abdomen, is the best means of immobilization that can be devised. A bandage, however, tight enough to support the kidney is apt to cause colic or distress to the child.

It is of the highest importance that strain-

ing of the abdomen should be avoided; hence the bowels should be kept regular and free, dyspepsia should be promptly treated, and abdominal indigestion prevented if possible. Acute attacks of indigestion with vomiting should receive prompt treatment, for the act of vomiting is one of the most certain means of forcing a kidney from its normal position. It is practically impossible to keep a kidney in proper position after it has been once or twice displaced, if the child is subject to attacks of acute indigestion with vomiting.

The case should become a surgical one if the pains persist or become unbearable, or attacks of peritonitis or hydronephrosis through twisting of the ureter occur. An operation should then be performed for fixing the kidney to the posterior abdominal wall.

FOR REMOVAL OF WARTS OF THE LID.

ALMON BROOKS tells us in the *Ophthalmic Record* for April, 1899, that there is no remedy equal to fuming nitric acid, especially when applied on a toothpick or sharpened match, for the cure of warts on the lid. The growth is first denuded of its epithelial layer by means of a very sharp knife, when the sharp point of the stick carrying the acid is placed as nearly as possible in the center of the wart, and a boring motion imparted by rolling the stick between the thumb and forefinger. As soon as a smarting sensation is felt the application must be discontinued for the occasion. The process must be repeated (after three or four days), although two applications are usually sufficient when the papilloma is not large.

The advantages of this method are that it is painless, the absence of disfiguration during the treatment, the freedom from interruption of the usual occupation, and the recovery without a scar and usually without leaving a trace of the former site of the growth. It differs from the ordinary application of nitric acid in that the papilloma slowly shrinks and disappears, and is not merely burned away, as in the usual plan of dealing with such growths.

THE PROGRESS OF THE SERUM TREATMENT OF TUBERCULOSIS.

Dr. DAVIES, of Bristol, England, recently read a paper on the origin and development of bacteriology, in which he briefly traced the rise and progress of the germ theory of disease. He said that the science of bacteriology may be said to date from 1675, when Anthony van Leeuwenhoek, a linen-draper, became interested in optics, learned the art of lens grinding, and managed to produce a lens with which he saw in rain-water living motile animalcules, smaller than anything seen before. In 1683 he presented a thesis to the Royal Society in London on a microorganism in tartar from between the teeth. Marcus Antonius Plancus was the next investigator, and produced some valuable additions to the study of bacteriology; but it was not until Henle took up the question that the subject was appreciated at its full significance. Every year has added to our knowledge, and the advance made toward solving the mysteries involved in the origin of disease has within a comparatively short period been nothing less than phenomenal.

Quoting from Dr. Davies' paper, the leading points in the development of bacteriological technique have been as follows: In 1854 the use of the cotton-wool plug filter (Schröder and von Dusch); sterilization of culture fluids by heat; discontinuous sterilization (Pasteur and Koch); 1877, Weigert's introduction of the aniline dyes for staining bacteria; 1881, Koch's introduction of solid culture media—plate methods. Between 1849 and 1863 Pattender and Davaine worked on the anthrax bacillus. Then came Pasteur's work on pebrine or silkworm disease. In 1873 Obermeier found the spirillum of relapsing fever. In 1880 Eberth and Koch observed independently the bacillus of typhoid, and in 1882 Koch published his discovery of the tubercle bacillus and Pasteur made his first communication on rabies. In 1884 Koch published his discovery of the cholera spirillum, and in the same year Loeffler described the diphtheria bacillus, and Nicolaier and Kitasato worked on the bacillus of tetanus. In 1892 the bacillus of influenza was discovered by Pfeiffer and Canon, and in 1894–96 Kitasato described the bacillus of plague then prevalent in Hong Kong. Although the origin of so many diseases has been shown to be bacterial, yet in the case of most of those in which an antitoxic serum has been also found and used, the treatment has hardly come up to the expectations formed of its efficacy. In no instance has failure been more conspicuous than in the serum treatment of tuberculosis. Koch by his discovery of the bacillus tuberculosis effected a complete change in the popular view regarding that disease, and when he later announced that he had also discovered its antitoxin, hopes

were raised that at last the scourge might be eradicated. Of course, the fact that these views were far too sanguine was soon made clear, and in the natural reaction of mind that followed a declining interest has been taken in the investigations of the workers who, undaunted by the first discouraging result, have ever since been plodding steadily on toward the desired goal. It cannot be asserted that their labors have as yet been attended by a large measure of success, or, indeed, that any definite advance has been made in the endeavor to produce a curative serum for tuberculosis. Nevertheless the fact that tuberculosis is not an actively infective disease should always be borne in mind, and that in consequence the difficulties in the way of finding thoroughly effective antitoxin are immensely increased.

The transference of immunity to tuberculosis was, as is pointed out by Dr. E. L. Trudeau and Dr. E. R. Baldwin, of the Saranac laboratory for the study of tuberculosis, successfully accomplished even earlier than the development of tetanus and diphtheria antitoxin. In 1888 Héricourt and Richet reported favorable results in transferring immunity to tuberculosis from dogs to rabbits by serum injections. Dr. Trudeau has been engaged in experiments on immunity to tuberculosis since 1891, and together with Dr. Baldwin since 1894, and the two have recently published a paper treating of their studies with serums during the latter period. The studies in question have been entirely confined to such experimental proof of the presence of curative and antitoxic properties in serums as could be obtained by laboratory methods, and the results of four years' work in experiments upon four sheep, three asses, twelve fowls, eighteen rabbits, and four hundred and fifty guinea-pigs is as follows:

1. A sheep was injected intravenously with killed thymus cultures. The result was so unsatisfactory that the serum tests were not conclusive.

2. Chickens were inoculated intraperitoneally with mammalian tuberculosis. The serum revealed no germicidal or inhibitive action on the tubercle bacilli, nor favorable influence on the course of the disease in guinea-pigs.

3. A sheep was injected with tuberculin. The serum was wanting in germicidal, antitoxic, or curative effect, so far as tested.

4. A sheep was inoculated intravenously with non-virulent cultures. Cachexia followed, and the serum was therefore not used.

5. An ass was inoculated as in 4; it died from pulmonary embolism. The serum was not bactericidal to tubercle bacilli.

6. An ass was inoculated with virulent tubercle bacilli and treated with tuberculin. The serum showed no germicidal nor curative but possibly some antitoxic effect.

7. An ass was inoculated with non-virulent tubercle bacilli and treated with various extracts of tubercle bacilli and dead bacilli. The serum showed no activity.

8. Rabbits were inoculated with non-virulent and virulent tubercle bacilli and recovered. Their serum possibly conferred some protection in tuberculin poisoning and possibly prolonged the lives of treated guinea-pigs.

The chief lesson learned from these experiments is that none of the serums appeared to prevent local or general reaction from small doses of tuberculin, nor to influence the temperature of tuberculous animals. The progress made in researches having for their object the discovery of an antitoxin for tuberculosis is slow and disappointing compared with the rapid strides toward perfection taken by the antitoxins for diphtheria and tetanus. Every day, however, fresh knowledge is being gathered in this particular branch of science, and the deeper the insight gained into the subject of immunity and antitoxins generally, the brighter will the outlook appear for the discovery of a tuberculosis antitoxin which will effectually cure the disease.—*Medical Record*, April 8, 1899.

ANTIPYRIN IN DYSENTERY.

Ardin-Deltat has employed antipyrin in the dose of seventy-five grains to eight ounces of water as a rectal injection in dysentery, given three times a day and retained for fifteen minutes. He claims that the relief from pain and tenesmus is immediate, that the number of stools is decreased, and that convalescence is speedily established.

STARCH DIGESTION IN THE STOMACH.

Austin states the result of a research on his part upon this subject in the *Boston Medical and Surgical Journal* of April 6, 1899. He says that from the results of his experiments the following facts seem to be well established:

Taka-diastase digests starch with remarkable rapidity in a neutral or slightly acid medium; and its rapidity is directly propor-

tional to the quantity of taka-diastase used. Taka-diastase in the above medium is capable of digesting three hundred times its own weight of starch in one hour.

The digestion of starch by taka-diastase is accelerated and enhanced by the presence of a small quantity of free hydrochloric acid, while beyond a certain amount the free hydrochloric acid retards and eventually arrests the diastatic digestion.

The digestion of starch by taka-diastase is not interfered with by organic acids for all practical purposes; on the contrary, the presence of a small quantity of organic acid enhances the diastatic digestion of starch.

The presence of albumin combined with hydrochloric acid seems to lessen the hindering action of free hydrochloric acid on starch digestion.

Albuminous foods—both of animal and vegetable origin—combine with, or neutralize, free hydrochloric acid of gastric juice, making the acid perfectly inert. The combined hydrochloric acid has no hindering action on diastatic digestion by starch.

In dogs' stomachs, when albuminous foods are given with starchy food, no free hydrochloric acid is found at the end of one hour, and in the meantime starchy foods are perfectly digested.

In the human stomach, when an ordinary regular meal is taken, the albuminous matter of the food combines with the hydrochloric acid of the gastric juice as fast as it is formed at least for a period of one hour, and such combined hydrochloric acid has no hindering action on starch digestion, and the diastatic digestion of starchy food is practically completed within that period.

SOME OBSERVATIONS UPON ERYSIPELAS AND ITS TREATMENT.

CHARLES M. ALLEN writes on this subject in the *Medical News* of April 8, 1899. He states that in treating and observing a group of one hundred cases he has been struck with the frequency of coexisting or preceding nasal affections in the facial cases. In former times these were almost always put down as "idiopathic," in contradistinction to the traumatic forms, or those in which some solution of continuity of tissue could be discovered. He says it has become his conviction that in the absence of cutaneous lesion or throat affection to account for it, the nose is the part through which ingress is effected by the cocci. In every instance of facial erysipelas observed (and the great majority have been of this variety) he has inspected the nares and made inquiry regarding nasal disease. The result has been that at least two-thirds of the patients gave evidence or history of disease.

Believing as firmly as he does in the efficacy of ichthyol, Allen has naturally turned to this remedy as well in combating the process at its seat of origin, and has applied in all cases a fifty-per-cent watery solution of ichthyol, so as to bathe the whole anterior and posterior nares as far as possible, covering over all fissures and excoriations at or near the introitus. Upon the skin surface he employed a twenty-five-per cent solution in collodion. The results have been surprisingly good, and he has repeatedly been able to demonstrate to his assistants and to students a complete cessation of the process, so far as symptoms, temperature, and objective signs go, within twenty-four hours of the first visit. Many other patients were discharged cured upon the second or third day. Almost all the cases were seen early—*i.e.*, in from twelve to twenty hours of the chill or earliest evidence of local inflammation.

Aside from an occasional prescription of ichthyol in pill form to correct some gastro-intestinal disturbance, or something to relieve headache, no internal medication whatever has been made use of during the attack. During several years he has not given a single dose of tincture of iron in erysipelas. The adhesive band has been applied in a number of instances, usually in erysipelas of an extremity, in combination with the ichthyol paint, and always with the most gratifying results.

There have been no deaths to record in these one hundred cases, so far as Dr. Allen has been able to follow them, or to learn from the district visiting physician who might have seen some of the patients subsequently, although extremes of age are represented. In view of the fact that many subjects gave a history of one or more previous attacks, and the well known tendency of facial erysipelas to recurrence, he would strongly recommend attention to the nose and throat as a prophylactic measure, and has no doubt ichthyol will be found a useful drug in ozenas and chronic conditions requiring antiseptic and deoxidizing or reducing agents. The advantage of rubber adhesive plaster bands over the application of several layers of contractile collodion is that the latter is apt to break at some point,

and it is through this open door that the erysipelatous process is seen to advance into new territory just as water rushes through a break in a dam and overflows the plain.

Dr. Allen recently treated a number of children for erysipelas of the extremities, and has had most prompt results from what he calls his "combined method." He now has about fifty cases in which the adhesive constriction has been combined with collodion painting. He feels confident that if this plan be resorted to early and be properly carried out, no necessity will arise for scarification to produce a barrier, nor for resort being had to antistreptococcic serum, which so far as he can learn is of doubtful efficacy in severe cases in infancy and childhood.

BLACKWATER FEVER.

The Lancet of April 1, 1899, contains an article by CROSSE on this important subject. After discussing the pathology of blackwater fever, and showing what he holds to be its connection with malaria, Dr. Crosse comes to the practical question of its treatment. In dealing with this it will be well to bear in mind that three distinct factors are present. There is, in the first place, the attack of malaria during which the hemoglobinuric paroxysm develops; secondly, there is the chronic malarial toxemia which has predisposed the patient to the attack; thirdly, there is the sudden loss of hemoglobin, which in its effect in no way differs from an ordinary severe hemorrhage. The above are present in all cases. Sometimes there is another factor present in the subsequent nephritis. It is clear that only the first of these—namely, the malaria—would yield to quinine. So far as is at present known, quinine has only a parasiticide and not an antitoxic function in malaria, and hence it cannot be relied upon for treatment of toxemia, and obviously not for the hemorrhage. Quinine, therefore, should be given in blackwater fever, but with the express object of clearing the blood of malarial parasites, and hence it should be given in full doses similar to those given in ordinary attacks of tropical malaria. It must, however, be clearly understood that by the time a patient has reached the point of hemoglobinuria his tissues are probably much degenerated and his vital functions seriously lowered; hence, though we may cure his malaria by quinine, we must not be surprised should he succumb.

A cachectic patient may be unable to withstand a severe hemorrhage; when to this is added the constant and distressing vomiting which often involves starvation, he is clearly liable to die from exhaustion, as many of the patients certainly do. On the other hand, this is a very different thing from saying that quinine is of no use in blackwater fever. Dr. Crosse holds that it should be always administered in doses sufficient to make it certain that the blood is freed from parasites, just as the first step in the treatment of a patient suffering from sapremia due to retained placenta is to clear out the uterus and so remove any danger of further infection.

It is frequently difficult to efficiently administer quinine by the mouth on account of the persistent vomiting, and administration by the rectum is unsatisfactory. The author is himself a strong advocate of the hypodermic administration of quinine under these circumstances, and in this practice says he is supported by the profession in Italy and in America—though, as far as he knows, many English medical men hesitate to adopt it. The advantage of the hypodermic method is sufficiently obvious, for one can rest assured that the dose which we administer is actually absorbed. The supposed difficulties are really hardly worth our consideration if we are thoroughly aseptic. Sulphate of quinine is not suitable for hypodermic injection. Perhaps the best salt is the hydrochlorate, which is chiefly used in Italy; it is soluble in its own weight of water. The acid hydrobromate, which is soluble 1 in 6 of water, may also be used, especially if the patient is liable to cinchonism. Personally, when in Africa, Dr. Crosse used the lactate, which is soluble (according to Squire, seventeenth edition, 1899) 1 in 6 of water. He is inclined to think that ten grains of quinine administered hypodermically every eight hours on the first and second day would be a sufficient dose; after this, he suggests that five grains should be given twice a day till the end of the attack. He also mentions that he always boils the solution of quinine and injects it while it is quite warm. When the drug cannot be administered hypodermically larger amounts may be necessary. In a case of blackwater fever which he recently saw in England, quinine was at first given by the mouth; the patient had a relapse. It was then given hypodermically, and the patient recovered without any further relapse. It is of course to be remembered that quinine will accumulate if the urine is either greatly reduced or suppressed, and therefore it must not be contin-

ued in the same doses should this contingency occur.

So much for the treatment of the malarial element; as regards the other two factors the main indications are to maintain free excretion with the view to liberating the body from the accumulated toxins and to procure rest and nutrition, which will enable recovery from the anemia to take place. If the bowels are not opened a cholagogue purgative and enema should be given; but overpurgation should be avoided. Dr. Crosse always administers sodium bicarbonate freely; this helps to allay vomiting and gastric pain, makes the patient more comfortable, does good by its diuretic action, and also helps to diminish the acidity of the urine. Opium should be given without hesitation to procure rest. Nutrition must be maintained by rectal feeding if necessary. Strychnine and digitalis may be necessary in cases of extreme asthenia; they will act beneficially by helping to maintain the renal blood-pressure and therefore the secretion of urine, for doubtless some of the cases of anuria occurring in blackwater fever are the result of collapse and not of nephritis. If nephritis occurs the usual remedies are to be adopted, but caution should be used in the administration of such depressing drugs as pilocarpine, from the use of which he has seen disastrous results; if it is decided to administer this drug, not more than one-sixth of a grain should be given at one time. After recovery the patient ought to be advised to take a holiday, if possible in England, and should not return at any rate until he has completely recovered from his anemia and cachexia. Indeed, on general principles it is probably desirable that no one should return to Africa after an attack. This is particularly the case where the blackwater fever has developed in spite of precautions, but applies less to those cases where the attack can be traced to exceptional hardship and privations which are not likely to be repeated. Those who, from one cause or another, cannot stand quinine, and those who suffer from even slight albuminuria, should not be selected for malarious climates. Finally, Dr. Crosse urges that prophylaxis of blackwater fever by habitual use of quinine will be found to be more hopeful than its treatment. He has come to the definite conclusion that besides adopting precautions in regard to exposure to chills, wet, and to the sun, and as to moderation in food, alcohol, and sexual matters, every resident in the more malarious parts of Africa should take at least five grains of quinine each day. In the large majority of cases Dr. Crosse believes that this would prevent the chronic malarial poisoning which is the predisposing cause of blackwater fever, and would do much to eliminate this scourge from the colonies.

THE COMPLICATIONS OF THE SERUM TREATMENT OF DIPHTHERIA.

This important theme is well discussed by BOLTON, of Homerton, in *The Lancet* of April 1, 1899. He thinks that the value of the serum treatment of diphtheria being now thoroughly established, its complications, which are fairly constant, become somewhat important. During the past few months Dr. Bolton has collected at the Homerton Fever Hospital one hundred cases which he has personally examined each day, and on these cases his paper is based. These complications are the following: rashes, pains in and around the joints, fever, transient albuminuria, abscess, bruising, and sloughing at the seat of injection, and certain constitutional disturbances.

Bronchopneumonia, nephritis, and other inflammations, and also sudden death following the injection of antitoxin serum, have been recorded, but nothing of this kind has occurred in the London hospitals, where several thousand injections are given annually. The blood-serum is responsible for causing the rashes, the pains, and the fever, as these occur whether the horse from which the serum is taken be immunized or not. Different horses produce different effects with regard to the prevalence of pains and the proportion of the varieties of rash, and hence the percentage of these varies constantly. The effect of dose on the frequency of the rashes is very little if anything. Dr. Bolton has calculated out the average dose of all the patients treated at the Homerton Fever Hospital from January to June, 1898, neglecting those who died before the rash had time to appear, and finds that of those who developed a rash it was 6223.5 units, and of those who had no rash it was 5332.1 units. During the same period 166 patients had multiple injections, and of these 90 had a rash and 76 had no rash; and 351 patients had each one injection, and only 156 had a rash and 195 had no rash. Hence it is probable that large and also multiple doses increase the frequency of the rashes to a slight extent. Adults are more liable to severe pains than children. The severity of the

attack of diphtheria and the day of the disease on which the antitoxin is administered have no influence on the frequency of rashes and pains. For the year 1898 the percentages at the Homerton Fever Hospital were: rashes, 43.2 per cent; pains, 7.4 per cent; fever alone, 3.6 per cent; and abscess, 1.3 per cent.

There are two varieties of rashes, urticarial and erythematous, and these may occur alone or be combined in endless variety. Of the 100 cases, 25 were urticarial, 31 were erythematous, and 44 were combined; and of the latter 26 were mixed and 18 were successive, the rashes following one another immediately or after an interval of from one to five days, either urticaria or erythema coming first. There may be more than two rashes of the same or different variety following one another. The time of appearance of these rashes varies from the second to the eighteenth day after injection, exceptional cases occurring at earlier or later periods, but the vast majority occurring from the seventh to the ninth day after injection. The dose does not affect the severity or time of appearance of the rash; doses of 4000 units, 8000 units, 12,000 units, 20,000 units, and 24,000 units may all cause a rash on the eighth day; 4000 units may cause it on the second day, or 8000 units on the eighteenth day. Multiple doses given at intervals of a day do not affect the time of the appearance of the rash, but if a patient has had antitoxin administered a month or two previously the rash which is caused by a subsequent injection comes out very early, in some cases from twenty to thirty minutes after the injection. The rashes last for two or three days as a rule; they often last for a week, and sometimes for sixteen days.

The wheals occur in groups and vary in size from a papule to a patch of half the size of an adult hand. They disappear quickly and leave patches of simple erythema, and are replaced by fresh ones. A wheal may come and go in half an hour, and successive crops may come out at intervals of from one to four days. Itching is present, and there may be *urticaria factitia*. The distribution is usually general. The favorite places on the trunk are the seat of injection, the shoulders, and the buttocks. Both the flexor and the extensor surfaces of the limbs are involved, but the latter more frequently than the former, and patches tend to collect round the joints. The neck, the cheeks, and the eyelids are commonly affected. The rash frequently begins at the seat of the injection and may remain limited to this area, and in a few cases the limbs alone are affected. Edema of the cellular tissues often accompanies the urticarial eruption. The eyelids, the base of the nose, the cheeks, the lips, the scrotum, the prepuce, the labia majora, and the dorsa of the feet and the hands are the parts commonly affected; sometimes the whole of a limb is swollen, or in rare cases the whole of the body. The edema lasts from one to four days and may be accompanied by enlargement of the lymphatic glands.

Of the erythematous rashes there are four types: (1) resembling erythema multiforme, either clearing up in the form of rings or not, and sometimes becoming hemorrhagic; (2) simple erythema in patches; (3) scarlatiniform, resembling scarlet fever; and (4) morbilliform, resembling measles.

The first variety consists of maculæ, which may or may not be raised, and which vary in size from that of a papule to about that of a shilling. Large patches are formed by fusion, which may involve the entire circumference of a limb, or the maculæ may be chiefly discrete, and on the trunk especially they tend to be small, frequently giving rise to a very coarsely punctate appearance. The fusion into patches is especially marked on the extensor surfaces of the joints, and sometimes the skin desquamates in this situation and gives rise to the appearance of psoriasis. The maculæ are bright red or almost purple in color, and are sharply defined, the intervening skin being normal. Occasionally a few tiny vesicles may be seen on their surface. If the maculæ and patches clear up in the form of rings the latter may join together, forming gyrate figures, or they may be small and more or less discrete. On the trunk and opposite the joints huge rings may be formed, and on the trunk a large ring may sometimes be seen having its periphery formed of tiny macules more or less fused, with free macules dotted round its circumference, and the center fawn-colored and slightly desquamating. In a few cases the rash becomes hemorrhagic and a mottled pigmentation is left for a few days. There may be a little desquamation, and sometimes there is itching. The distribution of the rash is more definite than in the urticarial variety. On the limbs it is much more common on the extensor than on the flexor surfaces, and it is also more profuse on the extensor aspect, especially round the joints, where large patches or rings are very fre-

quent, with small macules extending up and down the limb. The rash occurs over the front and back of the trunk, forming large patches at the seat of injection (in the loin) and on the buttocks. It may be present on any part of the face and sometimes behind the ears. It may commence on the limbs, but very frequently at the seat of injection, and its distribution is usually general, although it may be limited to the limbs or the seat or seats of injection.

The simple erythema consists of non-raised, ill-defined, bright-red patches of irregular shape producing a blotchy appearance. It is most frequently the result of wheals, but it undoubtedly may occur independent of them. It occurs commonly at the seat of injection, where it sometimes extends from the loin on the back and the abdomen as a punctate erythema. It forms patches on the cheeks and on any part of the trunk and limbs. These erythematous patches are very fugitive, and it is often very difficult to say whether they are or are not the result of wheals. In some instances, as on the buttocks, they are due to pressure. There is no desquamation.

The scarlatiniform rash occurs very early and when the patient has had a previous injection some time before. In one case the patient had had antitoxin administered five months previously, and the rash came out on the day following the injection of 4000 units. This rash lasted for one day, and was replaced by an urticarial eruption lasting for four days; a macular rash then appeared for two days, and finally a crop of wheals for one day. The rash is a scarlet punctate erythema, thickest round the seat of injection, where it forms a bright-red flush. It is often thicker on the extensor than on the flexor surfaces of the limbs, and frequently clear patches of skin are visible. It may occur in patches only, chiefly on the trunk, and it is then combined with other rashes. When general it may be distinguished from scarlet fever by the usual absence of vomiting, the rapid disappearance of the rash, and the occasional patches of clear skin. It may also be accompanied by other rashes. Desquamation does not usually occur, and the rise of temperature may be slight.

The morbilliform rash is more frequent than the scarlatiniform, and is commonly preceded by an urticarial eruption, but it may occur alone. This rash is a macular erythema like measles, but it may begin on any part of the body and especially on the limbs, where it is more profuse than on the trunk and face. It is thickest on the extensor surfaces of the limbs, forming patches round the joints, and may be seen behind the ears. Patches of clear skin may be seen, and there may be ring-formation during the disappearance of the rash, which as a rule leaves no desquamation. There is conjunctivitis and frequently swelling of the lids, but sneezing and cough are as a rule absent. The rash lasts from three to four days, and there are commonly pains in the limbs. Fever may be absent, but as a rule the temperature suddenly runs up to about 103° F. when the rash appears, and falls either just before or when it disappears. Six out of the one hundred cases were of this variety. Four appeared on the fourteenth day after injection (the incubation period of measles being on the average about ten days), and had doses respectively of 4, 12, 16, and 24,000 units. The remaining two appeared on the twelfth and fifteenth day, and each had a dose of 12,000 units. Five were preceded by an urticarial eruption, and one by urticaria and macular erythema combined at the seat of injection. It is interesting to note that the scarlatiniform rash comes out much earlier than the morbilliform variety, and that the incubation period of scarlet fever is from two to four days, as compared with that of measles, which is ten days. By attention to the above points these two important rashes can generally be diagnosed from scarlet fever and measles respectively.

The joints and surrounding tendinous and muscular structures are affected, and there may be a little swelling of the joint, but it is quite the exception to find much fluid in the joint, and the skin over it is usually normal. In some cases the pains and temperature simulate acute rheumatism. The pains shoot about and shift from joint to joint, and there is also constant aching and intense pain on movement. There may be headache and furred tongue, and sodium salicylate produces relief. This condition lasts for three or four days, and in one case it lasted nine days. In other cases there may be simply a little aching in one or two of the joints which lasts for a day or two. When the pains have gone stiffness on moving the limbs is complained of. The joints most commonly affected are the knees, the remaining joints of the limbs being affected about equally. The hips, the knees, the wrists, and the hands are more commonly affected alone than any other joints. The

vertebral column is also frequently affected, and stiffness and pain in the neck and back are complained of. There is commonly pain in the temporomaxillary joint on opening the mouth, and less frequently in the sternoclavicular articulation. There is sometimes pain down the inner side of the thighs, in the popliteal space, and in the muscles of the calf. The pains occur with all forms of rash, and the temperature in these cases is usually coincident with the pain, except in the morbilliform cases, when the temperature is coincident with the rash. There may be a thick rash and shooting pains without any rise of temperature at all. The rash is frequently more profuse around the affected joints, and it may begin in the limb which is first affected by pain. The rash usually appears first, and the pain may occur at any time during the course of the rash, or exceptionally after it has disappeared. Less frequently the pain may begin and the rash appear in a day or two. The rash may start at the seat of injection, and when the limbs are attacked the pains appear.

A rise of temperature occurs most frequently with rash and pain, next rash alone, and rarely with pain alone. On referring to old notes of cases, rises of temperature are found at periods corresponding to those of the appearance of the rashes without anything to be noted to account for them, but personally Dr. Bolton says he has not observed a case of fever alone without either enlarged glands, otitis media, or some other cause. Fever occurs about equally with all forms of rash, and when associated with both rash and pain is almost always coincident with the pain, except in the morbilliform cases. When associated with rash alone it generally appears with the rash and may last throughout or disappear in a day or two. The rash may appear first, and sometimes the temperature only rises during the latter half of the period of the rash. In some cases the rise of temperature may precede the appearance of the rash. The course of the temperature curve is irregular, and its height may be anything between 100° and 105°, being especially high when associated with pain or in the morbilliform cases. Of the 100 cases, 26 had fever associated with rash and pain, 17 had fever with rash alone, 46 had rash alone, and 11 had rash associated with pain.

Of the 100 cases, 54 had albumin in the urine, and in 25 of these it was present before the rash appeared. This leaves 29 cases in which there was albuminuria during the course of the rash. In 24 of these cases there was a trace of albumin only, and it lasted from one to three days, and in two cases for six days, disappearing before the rash had gone. In the remaining five cases the albumin was present in considerable quantity, and outlasted the rash in three cases, disappearing with it in two cases. Neglecting these five cases, there remain twenty-four cases in which a trace of albumin appeared in the urine after the rash had come out and disappeared before the rash. Eleven of these cases had more or less fever at the time; hence there are left thirteen cases out of the one hundred with nothing to account for the albuminuria except that it was coincident with the rash. It may be argued that this albuminuria was a result of the disease itself, but on referring to the report for 1896 of the Metropolitan Asylums Board, it is found that the percentage of albuminuria for that year when antitoxin was used was 53.4 as compared with 24.1 in the year 1894, when no antitoxin was used. During the year 1896 every case of albuminuria, however slight, was included; but in 1894 at some of the Board's hospitals these slight cases were neglected, hence the percentage 24.1 is probably not high enough. However, under any circumstances there must have been a considerable difference in the two percentages, and this evidence is taken in favor of the fact that the thirteen cases mentioned above were the result of the serum. The amount of albumin was so slight, and it lasted for so short a time, that no possible harm could have resulted to the kidneys.

Abscess at the seat of the injection is no doubt due to infection through the needle, and is usually found in septic cases and in those complicated with scarlet fever. It is recognized in a few days as a tender, deep, localized swelling, the skin over it being normal. It readily heals up on being incised.

Bruising occurred round the seat of injection eight times in the one hundred cases. It may be at first of the size of a shilling and increase very little, or it may spread to the size of the palm of the hand. It appears in from one to four days after the injection, and lasts from four to seven days. In three cases the bruising was surrounded by a zone of small macules; in one of these the erythema came out with the bruise on the day after injection and disappeared on the following day, leaving the bruise. In the other two cases the bruising came out on the third day

after injection and the erythema two days subsequently; the latter became hemorrhagic, lasting for seven days.

Dr. Bolton says as far as he is aware there is only one case of sloughing on record. The patient was one year and ten months old, certified as diphtheria, 6000 units of antitoxin being injected. On the next day the case was found to be scarlet fever. Eighteen days afterward the patient developed laryngeal diphtheria, and 8000 units was injected into the left loin. Half an hour after this latter injection there was a general eruption of wheals, and on the following day a bruise appeared at the seat of injection, which was surrounded by a red flush. Bullæ then formed upon the affected skin, which subsequently sloughed over a considerable area, the underlying muscles being exposed. The child, who was seriously ill with scarlet fever and diphtheria, died at the end of fifteen days.

Three cases suffered from constitutional disturbance occurring soon after the injection, and they have been published in the appendix to the report of the Antitoxin Committee of the Clinical Society of London. In each case the patient had had previous injections, and each recovered. They all occurred during the year 1897, at the Homerton Fever Hospital, and were female children aged respectively four, six, and three years. The first patient (thirty-five days previously) had 12,000 units injected in three doses. Twenty minutes after an injection of 4000 units the patient had a rigor and convulsions with a temperature of 105° F. When this passed off the child vomited several times, and on the following day there was a mixed urticarial and erythematous rash. The second patient had 4000 units thirty-seven days previously, and thirty minutes after the injection of 4000 units had a rigor and became quite collapsed, with a temperature of 105°. On the following day a mixed erythema and urticaria appeared at the seat of injection. The third patient had been given 14,000 units forty-seven days previously, and fifteen minutes after 4000 units had been injected the patient vomited and was covered with a general urticarial eruption. Two hours later she had a rigor with collapse, and six days later still a macular erythema appeared.

In conclusion, one may say that the complications of antitoxin are at times very painful and inconvenient, but quite harmless, the only exception being the case in which sloughing occurred, and in that case the child was in an exceedingly bad condition as the result of scarlet fever and diphtheria combined when the antitoxin was administered.

CEREBELLAR ABSCESS.

GREEN (*American Journal of the Medical Sciences*, April, 1899) reports in very complete detail four cases of cerebellar abscess, and concludes that otitic abscesses of the cerebellum are due to extension of the inflammation either through the inner wall of the mastoid or through the labyrinthine passages. In the former the abscess is in the posterior portion of the cerebellum; in the latter in the anterior portion. The posterior abscesses can be reached by removing the inner wall of the mastoid, and then, by rongeurs or gouge and mallet, carring the opening backward to any desired extent, thus exposing the cerebellum below and behind the lateral (sigmoid) sinus, thus giving most thorough and efficient drainage.

The anterior abscesses, such as those reported in the paper, offer much greater difficulties. They lie so far forward that to reach them from an opening behind the sinus involves puncturing the brain for from an inch to an inch and a half, and drainage for this distance nearly on a level must be inefficient. To reach them from an opening in the occipital bone below the superior curved line requires a greater length of puncture and gives even less favorable conditions for drainage. From a point just in front of the sinus, however, the distance to the orifice of the aquæductus vestibuli is only about one-fourth of an inch, and to the meatus internus about three-fourths of an inch. The posterior surface of the petrous bone can be removed for some distance forward and inward from this point, however, thus reducing these distances one-half. This method has the advantage of allowing the surgeon to explore outside of the dura along the posterior surface of the petrous bone, which cannot be done in most cases from an opening behind the sinus on account of the great projection of the vein. It has the disadvantage that the opening can never be very large, about half an inch in diameter being its greatest size. The removal of the posterior surface of the petrous, where the bone is very thick, solid, and lying deep, is much facilitated by the use of gouges slightly curved on their hollowed sides for half an inch at the ends.

Whether these anterior cerebellar abcesses

will prove to be as amenable to treatment as the posterior ones experience has yet to show. The cases cited show the difficulties of reaching the lesion, even after it has been located, for in all three the labyrinth was the path of infection.

FURTHER CONSIDERATIONS OF THE MECHANISM OF EAR VERTIGO AND ITS RELIEF BY REMOVAL OF THE INCUS.

BURNETT (*American Journal of the Medical Sciences*, April, 1899) appends to his article with the above title a case of parotitic ear vertigo cured after a year's duration by removal of the incus.

The paroxysmal nature of ear vertigo can be explained only by assuming that it is due to temporary increase in retraction and impaction of the stapes in the oval window or temporary engorgement of the labyrinth from within, without compensatory yielding of the stapes, and a consequent pressure on the labyrinth water and the ampullæ. That such is the mechanism of ear vertigo is demonstrated by the curative effect of removal of the incus and liberation of the stapes. Why true ear vertigo occurs paroxysmally cannot be explained, but Burnett suggests that it is due to varying degrees of tension in the chain of ossicles or in the labyrinth fluid. The latter, being a part of the lymph system of the subarachnoid space (Hasse), must be subject to varying conditions of tension, as are the ventricles of the brain or the cerebrospinal fluid. Ordinarily the compensatory yielding of the fenestræ of the labyrinth toward the drum cavity is sufficient to prevent undue pressure in the ampullæ and vertigo. If, however, these yielding points are stiffened as in chronic middle-ear catarrh, in which there is always more or less retraction and impaction of the stapes and thickening of the membrane of the round window, then either an increased quantity of endolymph or perilymph, or both, emanating from the cranial cavity, or a spasmodic or further retraction of the chain of ossicles and impaction of the stapes from tympanic causes, as occurs in chronic aural catarrh, is competent to excite a paroxysm of ear vertigo.

If the liability to these paroxysmal impactions of the stapes can be prevented and greater freedom given to the movement of the stapes outward when its foot-plate is pressed upon from within, ear vertigo from the causes mentioned can be prevented. Such immunities can be granted by removal of the incus and consequent liberation of the stapes. In twenty-seven cases of ear vertigo in which Burnett thus liberated the stapes, entire freedom from incapacitating attacks of ear vertigo followed the operation. This relief did not always come at once, as long a time as six months having elapsed in some instances before entire relief was obtained; but in some of the worst cases immediate relief followed the removal of the incus, as in the case reported. In a few cases the tinnitus was entirely relieved, and in the rest of the cases greatly relieved, by the operation. The hearing, uniformly very defective in true ear vertigo, was uninfluenced by this operation.

TREATMENT OF TETANUS BY INTRACEREBRAL INJECTION OF ANTITETANIC SERUM.

QUÉNU (*Journal des Praticiens*, No. 11, 1899) reports five cases of tetanus, two of which occurred in his own practice, the remainder in the practice of Beurniur, Veslin, and Lariau. These were all treated by intracerebral injections of antitetanic serum, and all died.

TREATMENT OF ABSCESS OF THE BRAIN.

COLLINS (*American Journal of the Medical Sciences*, April, 1899) terminates a clinical summary of the treatment of abscess of the brain by the statement that a brief retrospect of the more important literature on brain abscess for the past year shows a deplorable mortality. The most potent factor in contributing to this frightful mortality is the failure to recognize the existence of abscess of the brain before it has produced either septic complications or profound exhaustion. Surgical technique has apparently very little, if anything, to do with it. The mortality-rate of brain abscess will drop just in proportion to the earliness of recognition and the courage of the physician in directing the surgeon to seek for it, even though there be no exact localizing symptoms. Abscess of the brain secondary to middle-ear disease is located in the vast majority of cases either in the temporal lobe or in the cerebellar hemisphere of the same side. When one is reasonably sure of the existence of brain abscess, no hesitation should be had in exploring first one of these regions, and then, if it is not found, the other. Delaying the operation until the appearance of unequivocal localizing symptoms, or procrastinating by operating

on the mastoid after symptoms of brain abscess are evident, when one is reasonably assured that abscess exists, is a far greater injustice to the patient than subjecting him to an exploratory trephining.

THE SURGICAL TREATMENT OF PERFORATING AND BLEEDING WOUNDS OF THE CHEST.

MATAS (*Journal of the American Medical Association*, April 1, 1899) in his paper upon this subject recognizes that there will ever be a certain percentage of penetrating chest wounds which will inevitably end in death, just as there will be others that will recover without treatment, with the simplest mode of treatment, and even in spite of treatment. But there is an intermediate zone, occupied by those in whom it is evident from the first that they have not sustained an immediately mortal injury; it is this doubtful zone which will furnish the battle-ground in which it will be possible for timely and skilful intervention, with the new aids here described, to tip the balance so that some will live who would otherwise die.

The dangerous hemorrhages of the chest that more frequently give the surgeon an opportunity for the application of direct hemostasis are those resulting from parietal, pulmonary, and diaphragmatic wounds. Hemorrhages from the aorta and its large intrathoracic branches, the heart, the pulmonary arteries and veins before they penetrate the hilum, the venæ cavæ and venæ azygos, are promptly fatal, especially if due to gunshot wounds; indeed, these are the chief causes of the great mortality from chest wounds on the battle-field. The fact that bleeding from the internal mammary or intercostal vessels is frequently covered up was clearly impressed upon the mind of the author by two cases of stab wounds of the internal mammary artery and one of the intercostals that came under his own observation. In at least one of these cases a careful and thorough examination would probably have averted a fatal end.

In conditions of great exhaustion, and where there is doubt that bleeding is actually going on, it may be sufficient to plug the wound with a bag, which is then so thoroughly packed with gauze that by making traction upon its neck the wounded vessel is firmly compressed from within outward; but when the situation does not improve, and there is evidence that bleeding is going on, the quickest and surest treatment is to enlarge the wound, using cocaine anesthesia as a help in extreme exhaustion, and to expose the intercostal or internal mammary. A subperiosteal resection of the rib is usually certain to expose the bleeding vessel, and is so easily accomplished that there is no excuse for delay in critical conditions when the patient's life hangs in the balance.

As to what shall be done in case the hemorrhage is from the lung, and not from the parietes, it can be stated that as yet there is no commonly accepted order of procedure. Superficial wounds of the lung give rise to insignificant hemorrhage, and the parenchyma bleeds but little. Nélaton has shown by experimental research that wounds of the large vessels at the root of the lung, before they subdivide in the substance of the organ, are invariably fatal in from nine to ten minutes. What are the wounds, then, that give rise to the hemorrhages which, though very serious, would allow of sufficient survival to permit of surgical interference? According to Nélaton's investigations they are the arterial branches of the second and third magnitude which accompany the larger divisions of the bronchial tubes. Therefore, the most dangerous zone of hemorrhage is a comparatively circumscribed area in the neighborhood of the hilum; the zone rapidly diminishes in importance as the bronchi become smaller and lose their cartilaginous resistance. Once the conviction comes that the patient is bleeding to death, prompt and decisive action is called for, without losing time in abstract possibilities of spontaneous recovery. Hence the secret of success lies in the judgment of the practitioner who knows when to act, and not wait until the opportunity has passed.

Before undertaking a formidable operation, however, the patient's capacity of resistance to shock or further traumatism must be carefully weighed, and due preparation must be made for the serious contingencies that will certainly arise in the course of the operation. Fatal shock, uncontrollable hemorrhage, cardiac and respiratory failure, are dangerous incidents to surgical intervention. Matas believes that this intervention should be preceded by an intravenous hot saline infusion, as a means of preventing shock. Moreover, preparations for artificial respiration, either Fell-O'Dwyer's or other apparatus (a bellows with a tube inserted in the larynx), should be made. A cannula is first inserted into the vein, so that salt solution can be injected the moment it is required. An osteoplastic flap

can often be formed by using Schleich's solution. Before sectioning a rib upon the proximal side, the intercostal nerve must be thoroughly anesthetized. If, under the influence of the saline infusion, the pulse fails to improve, it is perfectly useless to continue with the operation, and all hope of operative relief must be abandoned, unless the cardiac failure is attributable to respiratory embarrassment from collapse of the lung, when inflation of the lung by means of the bellows should be tried in conjunction with the saline infusion. The customary hypodermic and stimulant treatment is always applicable in these cases.

It is interesting to note that Matas considers that saline infusion is an agent to be relied upon when all other remedies in the materia medica fail. He states that it is not only vivifying, but almost resurrecting.

As to the precise method of operating little need be said. The opening into the chest wall must be very free, or the bleeding vessel will never be found. If made in the lateral aspect of the thorax, it should suffice to expose the entire external surface of the lung, and the internal also, if the organ is lifted up and dragged out of the chest.

THE TREATMENT OF TABETIC ARTHROPATHIES.

ULLMANN (*Centralblatt f. Chirurgie*, No. 6, 1899), as the result of an extensive study of the literature of the subject, and of his own experience, has collected the following cases of resection: One at the shoulder-joint, with prompt healing; two of the hip, with thoroughly satisfactory results; five of the ankle, with three excellent results; nine of the knee, with one good result, four failures, and two deaths.

Thirteen amputations are recorded—eight primary, five secondary. Three primary amputations of the thigh were followed by two failures; in the third the result is not known. Out of five amputations of the leg, three were cured. The results of the five secondary amputations were unfavorable.

It is interesting to note that there were quite as many cures following resection as amputation. This, perhaps, is explained on the ground that secondary amputations were usually performed at a period when the patient was much exhausted by a persisting suppuration. It is only when the spinal disease is little advanced, and the patient is able to be up and about, that a resection should be performed. Under other circumstances, when the patient's life is threatened by suppuration, amputation is indicated. To avoid recurrence after resection, orthopedic appliances must be employed.

THROMBOSIS AND EMBOLISM OF THE MESENTERIC VESSELS.

FIRTH (*Bristol Medico-Chirurgical Journal*, March, 1899) sums up as follows the knowledge of mesenteric thrombosis and embolism to be gained from modern literature:

The usual result of occlusion of the mesenteric vessels is infarction of the intestine. This infarction may follow occlusion of either the arteries or veins, the effect generally being greater when the latter are obstructed, for in that event there is no hindrance to the supply of blood by the artery, but there is hindrance to the escape, and of necessity there is produced intense vascular engorgement and often extravasation of blood in the affected area. When the superior or inferior mesenteric artery is blocked, engorgement also follows, the flow of blood producing it in this case being from the anastomosing arteries and from the veins, the backward pressure of the latter coming into play when the *vis a tergo* is cut off. Litten's experimental ligation of the superior mesenteric artery near its origin, in dogs, always produced this result.

Though infarction of the intestine and mesentery, with gangrene in the severest and ulceration or simple congestion in the mildest cases, most frequently follows occlusion of the superior mesenteric artery, yet in two cases observed by Virchow and one by Tiedemann the artery was found obliterated without injury to the intestine. Chiene has also reported a case met with in the dissecting-room, in which there was occlusion of the three anterior branches of the abdominal aorta supplying the viscera. The vitality of the intestine had in no way been impaired, having been maintained by the dilatation of collateral blood-vessels. It appears from these cases that the intestine escapes injury from interference with normal channels of blood-supply if the interference is sufficiently gradually produced to allow of compensatory dilatation of anastomosing arteries.

Councilman remarks upon the probability that small emboli frequently enter the superior mesenteric artery, their entry being favored by the size of that artery and the angle it forms with the aorta; but that the

free anastomosis between its small branches prevents these small emboli impairing intestinal nutrition. He reports three cases of embolism of the superior artery which he had met with. One of these is particularly interesting, for clinically the symptoms were those of complete intestinal obstruction, with vomiting finally becoming stercoraceous, great abdominal pain, and tympanites. The patient, who was eighty-five years of age, died on the twelfth day of illness. The intestine presented a few small ecchymoses, but there was neither intense congestion nor at any place complete infarction. A thrombus attached to an atheromatous patch on the anterior wall of the aorta, just above the origin of the superior mesenteric artery, almost completely occluded the opening of that branch. He thinks it probable that the blood-supply through the obstructed vessel, though sufficient to maintain the vitality of the intestine, interfered with its innervation, leading to paralysis of the bowel and the attendant intestinal obstruction. In a second case, though the entire superior mesenteric artery was obstructed, there was only a beginning of infarction in a small area of the intestine.

Dr. Elliot has analyzed the records of twenty carefully reported cases of occlusion of the superior mesenteric artery, in which the abdominal symptoms were not overshadowed by those of heart disease or by coma. All the cases were rapidly fatal. Pain, often colicky, was the most prominent symptom, and occurred in nearly all. A very notable symptom was the presence of blood in the stools. This was recorded in thirteen cases. In three the blood was passed without feces. In six the hemorrhage was profuse. In three other cases neither feces nor flatus was passed. Hematemesis occurred in three. Blood is usually found in the intestines at the autopsy, even if not passed during life, and is also frequently found in the peritoneal cavity. In two cases there was a palpable swelling, which proved to be infarcted bowel; and in another a swelling was due to a collection of blood in the mesentery. Subnormal temperature and extreme pallor were noticed in several cases, due no doubt to hemorrhage and peritoneal shock. In nearly half the cases there was diarrhea. In some there was neither diarrhea nor other disturbance of the bowels. The source of the embolism is usually vegetations on the cardiac valves, or on atheromatous patches in the aorta.

Watson, analyzing eight cases of total occlusion of the main trunk of the superior mesenteric artery, finds that in one case there was entire absence of abdominal symptoms, and in two others they were very slight, though the infarction affected a large part of the intestines. On the other hand, in a case in which only a small portion of the intestine was in a state of infarct, abdominal pain was sudden and violent, and there was profuse bloody diarrhea. It is obvious, therefore, that from the clinical signs it is impossible to tell the extent or degree of the intestinal lesion.

It will have been noticed that one of the most characteristic symptoms mentioned above was bloody diarrhea. If there is evidence in other parts of the body producing, for example, gangrene of the feet, or hemiplegia, hemoptysis, and chest pain, or splenic or renal trouble, the diagnosis of the condition under discussion will be much facilitated; but this evidence is often wanting. Again, the presence of heart disease and atheromatous arteries will help in the diagnosis. Watson thinks it possible to diagnose about one-fourth of the cases.

The affection, perhaps, most closely resembles intussusception, as pointed out by Elliot. In both infarction of the intestine and intussusception there is often diarrhea and intestinal hemorrhage, and pain and vomiting. The hemorrhage is apt to be more profuse in the embolic affection, but has been recorded as the principal cause of death in both. In intussusception tympanites is rare in the early stages. In that affection, too, the patients are usually younger. According to Fitz, fifty-six per cent of the cases of intussusception are under the age of ten. The characteristics of a tumor if present would be an important guide to the diagnosis.

A few cases are recorded of embolism of the inferior mesenteric artery, but the symptoms do not sufficiently differ from those in which the superior artery is affected to permit of clinical differentiation. It has been said that the presence of fresh blood in the dejections, and the localization of the pain in the lower part of the abdomen, point to embolism of the inferior vessel.

Elliot has found fourteen reported cases of thrombosis of the superior mesenteric vein. They were even more rapidly fatal than those of embolism of the artery, nearly all having died on the second or third day with symptoms of intestinal obstruction. The symptoms of this affection are much the

same as those of embolism of the corresponding artery, with the exception that diarrhea has not been recorded as present in any of the cases. Blood was vomited or passed in large quantity by the bowel in half the cases. In five of the cases there was cirrhosis of the liver, and two were syphilitic. In two cases a volvulus was considered to be the result of the thrombosis.

It may, therefore, be said that acute abdominal symptoms, associated with the passage of blood and with portal obstruction from cirrhosis of the liver or other cause, would suggest the diagnosis of thrombosis of the mesenteric veins.

The prognosis in these affections of the mesenteric vessels is very bad, though, as mentioned above, there are records which show that patients have survived.

Elliot has only found in literature three cases which have been operated upon. He reports two additional cases of his own. In none was the diagnosis previously made; and four out of the five died unrelieved.

Laparotomy, and resection of the intestine if it be found to require it, is the only treatment that offers any prospect of success. Watson states that the records of a number of autopsies showed that one-sixth of the cases might have been relieved by such treatment. In the single successful operation for this condition on record, that of Elliot, four feet of intestine, almost gangrenous from infarction, was removed. The open ends of the intestine were sutured to the abdominal wound, and the artificial anus thus produced was subsequently closed by a second operation. The patient was a male, aged twenty-five, and the cause of the infarction was thrombosis of the mesenteric veins. Elliot's second case was one of thrombosis of a branch of the mesenteric artery. An artificial anus was made in the descending colon; but the patient died. At the autopsy four inches of the intestine was found gangrenous and perforated. In most cases the presence of heart disease, atheroma, or cirrhosis of the liver militates strongly against surgical success.

CYSTITIS OF CHILDREN TREATED BY UROTROPIN.

HEUBNER (quoted in *Centralblatt f. die Gesammte Therapie*, April, 1899) reports excellent results from the use of urotropin in cases of cystitis in children. In two instances this drug was followed by cure. Once in a ten-year-old boy, suffering from gonorrheal cystitis, which had lasted for several years without yielding to other forms of treatment, urotropin was given for about seven weeks, in doses of about three grains five times daily.

A girl, two and a half years old, had suffered from cystitis for eight months. She was cured in three months by giving her, five times a day, one and a half grains of urotropin. This treatment was continued for three months.

In one child, aged seven, the medicament seemed futile. Operation showed pyelitis (hydronephrotic), because of a congenital stenosis of the ureter.

The drug should be kept up for some time after apparent cure and without intermission. It seems to be of little service when the urine is acid. The daily dose varies between eight and thirty grains.

ENTEROPLASTIC OPERATION TO OVERCOME OR PREVENT STENOSIS, WITH ESPECIAL REFERENCE TO THE SPUR IN PRETERNATURAL ANUS.

FENGER (*American Journal of the Medical Sciences*, April, 1899) states that the principle of overcoming a stenosis of a canal by transverse union of a longitudinal incision is applicable in any portion of the intestinal tract below the duodenum wherever the mechanical conditions will permit.

The longitudinal incision or opening should be made in the middle of the convex surface —that is, equidistant from the two sides of the mesentery, so as not to interrupt blood-supply by the division of large vessels in the intestinal wall. Free mobility of the loops of intestine and intact peritoneal covering are desirable conditions, but the latter is not absolutely necessary. In places where the intestine has no mesentery and where there is a limit to the infolding or bringing into apposition of the convex surface or the surface of the intestine opposite the mesentery, as the cæcum, extraperitoneal border of the rectum, or flexures of the colon, there is a limit to the length of the longitudinal incision. It is evident that the length of the longitudinal wound should not be unnecessarily great.

When there is no mesentery, and consequently only slight mobility, for folding in or apposition of the convex free surface of the intestine, or where the mobility is diminished or lost by diffuse inseparable adhesions, there

is, of course, a limitation to the application of this principle.

This plastic operation, when applied to resection and circular suture, will enable us to avoid narrowing of the intestine by folding in of its wall at the place of suture. If, for the sake of additional safety, it is deemed desirable to apply a second row of seromuscular sutures at a distance of one-half centimeter from the first row, the advantage of having a larger amount of serous surface in contact is counterbalanced by the increase in size of the circular fold. The narrowing effect of a large fold can be overcome entirely by the plastic operation, because we can make the longitudinal division long enough to secure a circumference of any size desired.

The same principle is applicable when we wish to unite an intestine of small caliber end to end with one of large caliber. By longitudinal division of the smaller intestinal tube the line of union is easily made to correspond to that of the larger tube. If the lumen of the larger intestine is not deemed sufficiently wide to permit of so much folding in as is required, a longitudinal division is also here resorted to, until at last as large a line of union as we deem desirable is secured.

In artificial anus, whether this be the result of a premeditated operation or of an accident, where the mucosa of the intestine is finally united to the skin, it is commonly observed that the so-called spur forms a more or less complete obstruction to fecal passage from the proximal into the distal portion of the intestine. The spur, so to speak, leads the bowel contents from the bowel out through the opening in the skin. The distal portion becomes small and retracted from non-use.

The spur is formed by a semicircular fold or group of folds located opposite to the opening through the abdominal wall at the place of the bend of the opened intestine. This semicircular fold may increase so as to extend entirely around the lumen of the intestine, thus becoming a circular fold, and is then located at the end of the proximal portion of the intestine close to the opening in the skin, through which it may protrude as a prolapse of the mucosa or wall of the proximal bowel. When this spur is well developed it may form, even when the intestine is loosened from the abdominal wall, an impediment to free fecal passage that frustrates simple transverse or longitudinal suture of the intestinal opening, and consequently necessitates resection of the loop containing the spur.

As resection with subsequent circular suture is as yet an operation of some gravity, it would be an advantage to avoid resection and still overcome the stenosis and the influence of the spur with a more simple operation.

A patient presented himself with a fistula in the right inguinal region which would admit the little finger. This fistula was circumcised about an inch and a half from its border, through the skin, subcutaneous tissue, and abdominal muscles, down to the transversalis fascia; this circular flap, like a collar, was loosened and closed tightly by a continuous silk suture, so that none of the intestinal contents could pass out. The abdomen was then disinfected, and clean covers were put on the table and the patient. The peritoneal cavity was opened one inch medial to and above the fistula. The isolation of the loop with the fistula was relatively easy. It was found to be a loop of small intestine. It was freed from adhesions, pulled up out of the wound, and surrounded by gauze. The loop of gut which it occupied was emptied of its fecal contents and ligated by means of gauze strips, two to three inches on each side of the fistula. The abdominal wall-flap was then cut off from the border of the fistula. It was evident that simple union of the fistulous opening either in the transverse or in the longitudinal direction would not do away with the stenosis caused by a ring-shaped valve of the mucosa, consequently could not remove the impediment to the passage of feces at this point. The effect of this spur was overcome by a plastic operation performed as follows:

1. A longitudinal incision at the convex border of the intestine one inch in length in the proximal end of the intestine through the tongue-shaped valve, up into the normal intestinal wall above it.

2. A longitudinal incision, one inch long, into the distal or narrower portion of the intestine below the spur, thus making a longitudinal wound two inches in length on the convex border of the intestine. As the original fistulous opening was two centimeters in diameter, the wound would be about three inches in total length. Upon making the incision at the upper end of the wound Fenger saw a Peyer's patch.

The spur formed a circular valve of two or three parallel folds of mucosa, half an inch broad, most pronounced on the mesenteric side, extending around the entire circumfer-

ence of the intestine, but smaller on the convex border.

3. Transverse union of this longitudinal wound: (*a*) Suture united the upper and lower corners and was left long for traction, dividing the wound into two transverse halves with the suture in the middle; (*b*) a continuous silk suture through all the layers of the intestine; (*c*) a continuous serosa-muscularis suture, one centimeter outside of the former; (*d*) a second continuous serosa-muscularis suture to bury the former.

4. Disinfection of the sutured loop with 1:1000 sublimate solution, and removal of the gauze ligatures around the loop of intestine.

5. Removal of the sponges and examination of the abdomen for hemórrhage.

6. Step sutures of the abdominal wall.

7. Gauze drain down to the appendix and over to the sutured loop of the ileum.

8. Injection of two quarts of physiological saline solution into the rectum.

The operation lasted three and a half hours. At its close the patient's pulse was good; no shock. The patient recovered.

BILATERAL MAMMARY CANCER.

ALBERT (*Wien. Med. Woch.*, Jan. 7, 1899) has met with four cases of bilateral mammary cancer among several hundred cases of that disease. In two he operated. The first patient was thirty-seven; she underwent amputation of a cancerous left breast, not ulcerated, with clearing of the axilla. Both the tumor and the axillary glands proved carcinomatous on microscopical examination. As an open wound was left, epidermis was grafted, on Thiersch's principle, from the patient's left thigh. Five months after the operation a mass as big as a walnut was removed from the cicatrix, but it extended into the deepest layers of the soft parts of the thoracic walls. When the wound was healing a tumor developed in the right breast, and was removed six weeks after the second operation; the axilla was cleared. About three weeks later a deposit was detected below the left axilla. Operation was impossible, as it clearly extended into the thorax. The patient died with symptoms of pneumonia just ten months after the removal of the left breast.

The second patient was fifty. A small cancerous tumor developed in the outer upper quarter of the left breast; the skin adhered, yet the tumor had hardly been observed over a month. The breast was removed, the axilla cleared. One year and a half later a small cancer developed in the center of the right breast, and the gland was removed, the axilla being also cleared. The patient recovered quickly, but no after-history is given.

In two cases no operation was performed. The patient in one case was a very big woman; her breasts stood prominently forward, owing to infiltrating cancer; the skin was stretched, and bore lenticular malignant deposits. Otherwise the case resembled lymphosarcomatosis of the breast.

The last patient was thirty-six. She had allowed a cancer of the right breast to go on for two years, and for five months the left had been involved; the disease seemed most advanced in the gland last attacked; the whole breast formed a tough mass fixed to the pectoralis muscle. Cachexia had not set in.

HANSY (*Wien. Med. Woch.*, Feb. 11, 1899) reports a case in a postman, aged sixty-one, adding two photographs. The patient applied at hospital for a large ulcerated cancer of the left nipple, which had existed about a year, with corresponding disease on the right side; the latter had grown with great rapidity, and ulcerated extensively. Disease was clearly advanced, the growths adhered to deeper structures, especially on the left side, and both axillæ contained masses of hard but painless glands. On September 6, 1897, the right mamma and the axillary glands on both sides were removed; the ulcer representing the remains of the left gland was scraped out and cauterized. The patient returned to his duty as postman, but died on May 1, 1898, of cancerous marasmus, with symptoms of internal metastases.

CYST OF THE PANCREAS TREATED BY INCISION AND DRAINAGE THROUGH THE ANTERIOR ABDOMINAL WALL.

POLLARD (*British Medical Journal*, March 11, 1899) has treated three cases of pancreatic cyst by drainage through an anterior abdominal wound. It has been objected to this method, on the one hand, that the adhesion which must of necessity be formed between the anterior and posterior walls of the abdomen might be injurious, and on the other hand, that possibly simple drainage might not effect a permanent cure of the disease. The author has delayed publication

of his cases in order that, in regard to them, time might show the validity or otherwise of these two objections. It is now nearly five years since the first case was operated upon; the second case was operated upon three years ago, and the third case two years ago.

The first case, thirty-four years old, was, in the early part of 1894, awakened one night by a sharp pain in his epigastrium, which caused vomiting. This persisted two days, when the vomiting ceased, and the severe pain was replaced by a burning sensation in the epigastrium, whence it radiated to the throat. The pain, associated with occasional attacks of vomiting, had persisted since. During the last six years the patient had suffered from some half-dozen similar, though less severe, attacks. His temperature ranged about 100°, and the upper part of the abdomen and the lower part of the chest on the left side were bulged, owing to the presence of a mass which could be felt to occupy the whole of the left hypochondriac region and a large portion of the epigastro-umbilical and left lumbar regions. This mass moved slightly on respiration.

The abdomen was opened by a six-inch incision in the left linea semilunaris. The cyst, which lay behind the stomach and transverse colon, was opened in the interval between the stomach and transverse colon. The great omentum was divided transversely, and the lesser peritoneal cavity was opened. A strip of gauze was packed into the wound between the stomach and the transverse colon, and the abdominal wound above and below this spot was closed. A dressing was then applied. On the sixth day the gauze plug was removed, and about three pints of fluid was withdrawn by means of a hydrocele trocar. Two days later an anesthetic was given, and after the removal of two pints of fluid by tapping the cyst was freely opened. The dense fibrous wall bled freely, therefore packing with cyanide gauze was practiced. On the following day this was removed, and a large drainage-tube was inserted. Six weeks later the man was still wearing a tube four inches long. This was continued for upwards of a year. The tube was then removed, and in less than a week the sinus closed permanently. Since the operation the patient has had occasional attacks of burning pain in the epigastrium—the last one nearly two years ago. The general health has been greatly improved. A hernia formed at the seat of abdominal incision.

The second case began by general malaise, which was followed in a few days by shortness of breath. During the night he was awakened by severe abdominal pain, which was followed by vomiting; these attacks recurred. In about two weeks a tumor was detected. Upon admission to the hospital a large mass could be felt occupying the left upper quadrant of the abdominal cavity; it did not fill the loin, nor cause bulging. On deep percussion there was slight resonance. When air was injected into the rectum a well-marked tympanitic note was obtainable in the left flank and at the upper part of the abdomen. This resonant area was behind the tumor. A four-inch incision was made, a little to the left of the middle line, over the most prominent part of the tumor. The great omentum was torn through, the cyst wall was exposed and was punctured with a hollow needle, and after sufficient fluid had been withdrawn to render the cyst walls lax, an incision about one inch long was made into the cyst, and its contents, about three pints, was withdrawn. The abdominal wound was sutured at each end, and the margins of the incision into the cyst were secured by several stitches to the margins of the central portion of the abdominal wound. The tube was removed in about four weeks, and the patient recovered completely. A small ventral hernia formed at the seat of the abdominal incision.

The third patient, aged thirty-six, first began to suffer with pain in his back; this was followed by sudden pain in the left hypochondrium, which spread up into his chest and nearly choked him. He kept his bed for a month, during which time the severe pain subsided, but the pain in his back continued. The tumor was noticed about the time that he began to suffer from back pain. The tumor occupied the left loin, but did not fill nor bulge it. The growth moved a little with respiration and was also slightly movable from side to side. It felt distinctly elastic. The operation was the same as in the preceding case. In about eight weeks the resulting sinus was closed. A hernia formed at the site of the drainage.

In none of these cases was there a history of pancreatic injury. In all the onset was characterized by severe epigastric pain, and the urine was free from sugar. The stools appeared natural, and there was no excess of undigested fat. In each case the fluid removed at the operation contained the three digestive ferments of pancreatic juice, but after they had been drained for a few days the discharge from the cysts was found

to have lost its digestive powers over starch and fibrin.

Pancreatic cysts have come forward in at least three different situations, namely, above the stomach, opposite the small omentum; between the stomach and the transverse colon, opposite the great omentum; and below the transverse colon, opposite the descending layer of the transverse mesocolon. The second of these positions is the most common.

The removal of the cysts has been recommended. The operation has been performed successfully in some cases, but in several there has been a fatal termination. Since it is now clear that drainage alone will suffice for the cure of these cysts, removal is no longer a justifiable operation. The advisability of draining these cysts through a posterior incision has been urged. If the lumbar operation could be performed safely without making an anterior incision, this would be the method to be preferred, but in many cases the anterior incision would be required to verify the diagnosis, and possibly to determine the exact spot at which the cyst could be best reached by the posterior incision. It must not be forgotten that important structures and large blood-vessels may be encountered in attempting to reach the cyst through an incision below the last rib, and that owing to want of space it might be difficult to recognize and avoid them. The only objection to anterior drainage which has become apparent is the occurrence of hernia at the spot where the presence of the tube prevented primary union in the abdominal wound.

OINTMENT FOR HEMORRHOIDS.

NEHIGAN (*Der Frauenartz*, Feb. 20, 1899) prescribes the following ointment for hemorrhoids:

> Compound tincture of camphor, 1 drachm;
> Camphor, 1 drachm;
> Belladonna ointment, 15 drachms.
>
> To be applied directly to the painful part.

TREATMENT OF FRACTURES BY MASSAGE AND MOVEMENT.

MILHIET (*Journal des Praticiens*, No. 11, 1899), following in this the teaching of Forgue and Reclus, and indeed the teaching of nearly all progressive and experienced surgeons, urges the necessity of recognizing not only in exceptional cases, but in nearly all instances of fractures, the powerful healing help which is offered by a wisely directed massage and movement. In fracture the solution of continuity is not the only lesion. There is always an effusion involving the surrounding soft parts. This effusion, if not quickly absorbed, becomes organized into plastic lymph, which may seriously cripple the functions of joints and tendons, and may contribute to atrophy and degeneration of the muscles, vessels, and nerves. Massage is the most powerful means we possess of causing rapid absorption of this effusion, and of preventing the atrophy and degeneration which often persists for many months after a fracture has become completely consolidated, and so maintains a disability which should not exist. Even when the skin is blistered or broken, and when veins are dilated, massage, if practiced in an aseptic manner, is applicable. It is only when aneurism is present, or when the fracture is dependent upon malignant infiltration, that this method of treatment is positively contraindicated.

As a lubricant, oil, borated or camphorated vaselin, potato starch, talc powder, or rice powder, may be used.

Massage should be practiced from the very beginning, always in the region of the fracture, usually directly over it. The rubbing should be in the direction of the venous circulation, and should begin with slight stroking. A preliminary application of compresses wrung out of hot water is often advisable, because of its soothing effect upon the pain, and its stimulating influence on the local circulation. After stroking for some time the pain is usually greatly lessened; then deeper motions may be practiced. Forgue and Reclus advise two rubbings a day, each of a quarter of an hour's duration at first; later the treatment may be lengthened. After having finished massage, the neighboring articulations should be carefully moved. Thus the troublesome stiffness which commonly follows fractures is avoided.

Certain fractures show no tendency towards displacement; for instance, a Colles' fracture which has been well reduced. Under such circumstances a fixation splint should be omitted entirely, and massage should be practiced as above described. When the fracture is attended with very slight mobility and displacement, a fixation splint is kept on for as little time as possible. When fractures are attended by great mobility and displacement, such as those of the femur and humerus, for instance, the immobilization is usually necessary for a time; this treatment should be made as brief as

possible, however, and should be supplemented by massage and movement of the joints nearest to the fracture.

THE TREATMENT OF SYPHILIS.

TAYLOR (*New York Medical Journal*, April 8, 1899) again enters his protest against the alluring routine treatment of syphilis, which has become all too popular in our system of medicine. He states that before considering the subject of treatment proper, it is very important to call attention to certain vicious therapeutic methods which still prevail to a certain extent, but which he thinks are slowly passing into desuetude.

About twenty years ago a most unfortunate reaction took place in the method of treating syphilis. Prior to that time it may be confessed that the method of using mercury was in general rather too lavish in its doses, and that in some cases harm was done. But the old-time Ricord plan of treatment (in vogue prior to 1870), in which an active mercurialization for six months, supplemented with three months' liberal dosage with the iodide of potassium, was, with all its drawbacks and imperfections (chiefly salivation and intestinal derangement), far more beneficial than the attenuated, emasculated, narrow-gauge, stencil-plate methods of treating syphilis which then were adopted in France, England, and America. The reaction from the vigorous use of mercury was too radical, and we complacently accepted a method of treatment built up on theories and fantastic reasoning, which has proved to be one of the most calamitous events in medical history. We hear little to-day in America of the ingenious and sophistical reasoning of the accomplished author of the interrupted treatment of syphilis, and there are few who wrestle with the labyrinthine problems of dose arithmetic, with its "full dose," "tonic dose," and "reserve dose," in administering mercury according to the tenets of the preposterous tonic treatment. But although these ingenious theories are either entirely forgotten or unknown to the present generation, the trail of the serpent is still visible in the routine methods followed by many in blindly relying upon the stomach ingestion of insoluble preparations of mercury in small doses. Happily for the human race, this slip-shod, happy-go-lucky method of treatment is less and less followed every year.

Chemical examinations have shown (and any one can ascertain the facts for himself) that when mercury does not produce gastro-intestinal derangement, a goodly amount of the drug is absorbed, as proven by its excretion in the urine and feces. When matters thus progress favorably the effect upon the syphilitic condition is beneficial, but as time goes on chemical examinations show that the quantity of mercury assimilated grows less and less, and that though taken by the mouth, it is not absorbed, and that its therapeutic effect is then lost.

Clinical observation has clearly shown that for a time, in the early weeks of syphilis, a decidedly beneficial effect is produced upon the disease by mercury given by the stomach, but that in a few weeks the therapeutic action begins to wane and soon the remedy becomes inert. It is this temporary action of mercury given by the stomach, in long-continued and interrupted courses, which has brought to thousands of patients great trouble and suffering, misery, disaster, and death. They took the remedy long after it ceased to have any therapeutic effect, and the unextinguished infection kept right on its course of invasion and destruction.

When shall active medication begin? The best results are always attained when treatment is commenced just as soon as the secondary manifestations show themselves.

The date (as a general rule) at which the treatment of syphilis should begin is that at which the disease culminates in the general infection of the economy — namely, just as soon as the general rash appears, together with the other manifold symptoms of the secondary period.

Too much stress certainly cannot be laid upon the fact that in the early secondary stage there are certain conditions favorable to an active treatment — namely, a system virgin to mercurials and a greater susceptibility of the lesions to the action of mercury. This, then, is the most favorable time for efficient treatment, and it is the most critical one in the life of the syphilitic, for if the disease is attacked then its backbone may be broken.

It is always well to begin medication in a manner that will not annoy, disgust, or discourage the patient, who is usually in a rather unhappy frame of mind at the thought that he is syphilitic and that he has quite a long period of treatment before him. Therefore, it is not well to be precipitate in the institution of an inunction treatment. Since in these early days mercury by the mouth is generally well borne, is effective in result,

and is not distasteful to the patient, he may at once be put upon pills of the protoiodide of mercury, or of tannate of mercury, or of the thymol acetate of the same. In general, half-grain doses of these drugs may be given three times a day, and it will be rarely necessary to increase the daily amount taken beyond two or three grains of any of them.

It is important that this initial course should be active and rather prolonged, and in attaining this end the case must be carefully handled and watched. As a rule, the physician can form a correct estimate as to the probable effect of mercury upon his patient within a week or ten days. Having put the stomach and intestinal canal in normal condition, and the mouth and throat having received proper attention, the dose of the mercurial may be increased within a few days to the quantity which acts vigorously on the lesions and does not disturb the well-being of the patient.

We must at this time assure ourselves that the indurated nodule has wholly disappeared, that the lymphatic engorgement shows evident signs of involution, and that the rash has faded or is fading. The throat and mouth must be inspected very often, and any red patches or ulcerative lesions must be actively treated. It is always a good rule as the rash is declining to discontinue the pills and to give the patient one or two courses of mercurial inunctions, by which the whole surface of the body will be acted upon by mercury. In this way any infectious cells which may be left over from a local or general rash may be acted upon and destroyed. Even while the patient is taking pills mercurial ointment may be used locally upon the lymphatic ganglia, due care being taken that an overdose is not given. In like manner papular and pustular lesions in hairy parts should be treated locally.

By thus at an early date inducing the patient to use inunctions of mercurial ointment as an adjuvant treatment, it is seldom difficult, particularly with intelligent persons, to gain their consent to follow a full inunction treatment, and then the use of the pills may be discontinued. In proportion as the case progresses well the fear of the disease by the patient is dissipated and his morale improves. At this time the assurance on the part of the physician that the patient will be very much more benefited by systematic inunction treatment generally results in the patient's consent.

To be effective, the mercurial inunctions should be thoroughly administered over the whole body in regional parts, using about sixty grains of mercurial ointment. In some cases the inunctions may be administered on consecutive days; in others there may be intervals of one or two days between them. Usually after fifteen or twenty inunctions a period of repose may be allowed for a week or two, since after such a course fully three or four weeks elapse before mercury ceases to be eliminated in the urine and feces.

Either synchronously, or in the intervals of disuse of the mercurial frictions, we should give the iodide in goodly doses—ten, twenty, or thirty grains three times a day, or even in larger doses.

Then, again, it may be necessary, for various reasons, to suspend the inunction treatment for a long or short time, and in this event use a strong mixed treatment, as follows:

℞ Hyd. biniod., gr. ij to iv;
Potass. iodid., ʒ ss to ʒ j;
Tinct. cinch. co., ʒ iij;
Aquæ, ʒ j.
M. ʒ j ter in die ex aqua ʒ j.

In this way we can push along until six months have elapsed from the date of the onset of the secondary period of syphilis, during which time the patient has taken medicine more than five months. In most cases, if this carefully regulated and most effective treatment has been followed, an examination of the patient will show that he presents no evidence of the disease, and that his condition is most satisfactory. Then the patient may have a respite from medicine for two or three weeks. At the expiration of this time the treatment must be kept up for three months longer, and it must consist of alternations of the inunction treatment and the dosage with a mild or strong mixed treatment. As a cure progresses the intervals between inunctions may be longer, and the mixed-treatment dosage may be less strong.

After the lapse of a year, in many cases, the necessity for treatment may not be apparent, and most of these patients say that they think they are perfectly well. It is better, however, not to take any chances, and during the second year, and perhaps a little longer, a few courses of inunctions and of the mixed treatment may be taken.

In the carrying out of this methodical general treatment of syphilis in the second year of the disease, the periods of dosage may on an average be stated at two to three months, with intervals of rest of a month

or six weeks. In this way about eight months is occupied by actual medication. In most cases at the end of the second year of thorough treatment patients may be pronounced cured, provided they have not for many months shown evidence of the disease, that their lymphatic system appears healthy, and that their general health and nutrition are good.

BANGS (*New York Medical Journal*, April 8, 1899) holds that if it is admitted by the majority of syphilographers that histologically all of the secondary manifestations of syphilis are found to be composed of the same cell accumulation, with perhaps the development of a few connective tissue fibers, as compose the initial lesion itself, why should it be argued that there is "nothing to treat until generalization has manifested itself?" Again, if specific treatment of the initial lesions be warranted in particular cases, why is it not warranted — and indeed required—in all cases?

If, then, an initial lesion is present, and if specific treatment is good for it, why not begin at once the administration of that remedy which we know hastens the involution of those manifestations which belong to the so-called generalized or secondary stage? The effects of syphilis are due not only to the mechanical interference with the function of the part or parts where these exudates take place, but also to a systemic poisoning due to the elaboration and circulation of a toxin or ptomaine produced by the microbic body itself. If the vital forces of the individual are maintained at what might be termed a par of health, and all his functions kept at the highest point of activity, his economy is better able to take care of the toxins, while by the judicious administration of mercury his body is enabled to dispose of the granulomata or cell accumulations in their varying grades of intensity. This implies constant watchfulness, the exercise of careful, discriminating judgment, and in some cases ingenuity, on the part of the doctor, and on the part of the patient obedience, confidence, and patience.

As to methods of administration, if the remedy is well borne when taken by the mouth, this is the preferable mode. Only so much should be administered daily as can be digested easily and freely without interfering with stomach and intestinal digestion, but up to the point of the drug's physiological action. In the majority of cases a habituation to the remedy ensues, and therefore it is well to make intermissions in the treatment from time to time; always, however, maintaining the hygienic and dietetic *status quo* of the person. It should be observed that many persons do not bear the internal administration of mercury up to the point that may be necessary to act vigorously upon their lesions. In such cases the method of inunction should be resorted to at once. This is less depressing than the vaporization method, is not at all painful, and in spite of the staining of the skin is less disagreeable than the hypodermic method, and is often brilliant in its results.

It is a good custom during the course of the treatment of syphilis to intermit the internal administration of the drug, even if it is well borne by the stomach, and substitute inunctions, always keeping in view the general principles upon which the drug is administered.

In certain malignant forms, where the tissues of the individual seem to be rapidly breaking down as a result of the disease, hypodermic injections of the bichloride may be given with very prompt effect. They should be repeated with care, bearing in mind the fact that death has ensued from this method of using the drug. With ordinary precautions, however, and choosing the buttocks for the site of the injections, there is but little danger.

Even in cases of malignant syphilis the effect of the injections should be watched very closely, and every possible accessory measure taken to increase the general well-being of the patient.

One of the most important guides to indicate the period during which treatment should be carried on is the condition of the glands throughout the body, particularly the epitrochlear and those which are not usually found enlarged in the more common dyscrasias. So long as these glands remain enlarged, it is one indication at least that treatment should not be discontinued. Enlargement of the glands alone is not positive evidence of syphilis, but if the practitioner has followed his patient from the onset of the disease, and has appreciated that these enlargements have grown smaller or disappeared entirely under treatment, it is confirmatory evidence that they are syphilitic in nature. If the individual gives a suspicious history and has glandular enlargements, it is well to give him the benefit of the doubt and administer mercury; but at the end of three months, say, if no material change has taken

place in the size of the glands, it may be reasonably concluded that connective tissue changes have occurred in them to such a degree that they are now permanently enlarged.

The duration of the treatment, irrespective of the state of the glandular system, will depend somewhat upon the individual and the continued activity of his disease. But experience teaches that long-continued and gentle treatment for at least three years (some authorities say five, and one has lately urged seven) affords the patient protection from the effects of the disease later in life.

NERVE TRANSPLANTATION.

PETERSON (*American Journal of the Medical Sciences*, April, 1899), from a study of twenty reported cases of nerve transplantation, finds that the median nerve alone was operated upon in seven cases, the ulnar alone in three cases, and the median and ulnar together in two cases. The musculospiral was operated upon in seven cases, and the sciatic in one case.

The injuries to the nerves necessitating transplantation in ten cases were due to removal of tumors involving the nerves; incised wounds were responsible for four cases; injury following operation for necrosis twice; while gunshot wound, operation for gluteal abscess, ununited fracture, and simple fracture were responsible for one case each.

There were eight primary and twelve secondary operations. The time elapsing from date of injury to time of operation varied from forty-eight hours to one and one-quarter years. Eight out of the twelve cases of secondary operation, or two-thirds, showed improvement in sensation or motion, while only four out of the eight cases of primary operation, or one-half, showed signs of improvement. However, two of the eight cases were observed only ten and six days respectively.

The distance separating the central and peripheral fragments varied from three to ten centimeters. As far as can be judged, the distance did not seem to affect ultimate results. In nine cases the transplanted segments were from sciatics of dogs, in five from recently amputated limbs, in three from the sciatics of rabbits, and one each from the spinal cord of a rabbit and the sciatic of a kitten. In one case the excised nerve was itself implanted.

In nine cases catgut was used to unite transplanted segments to central and peripheral ends of excised nerves, in three silk, and once kangaroo tendon was employed. In seven cases no mention is made of the suture material.

Strictly speaking, no case can be said to have recovered entirely, if by that be meant a complete restoration of sensation, together with a return of the muscles to their former size and power. The nearest approach to this condition occurs in the case longest under observation, where at the end of six years sensation had entirely returned, and the only remaining weak muscle was the abductor of the thumb. In three cases there was practical recovery of sensation and motion, so that the hand was entirely useful. In two of these both median and ulnar nerves were operated upon.

There was complete return of sensation recorded in four cases. In three cases there was nearly complete return of sensation. Improvement in sensation was recorded in four cases, while improvement in muscular power is noted also in four cases.

There was improvement in either muscular power or sensation in twelve cases, while in six cases there was no improvement in either sensation or motion.

The shortest time any case was under observation was six days; the longest six years. Of the five cases under observation one year or more, three made nearly complete recoveries in both sensation and motion.

The average time in which sensation first appeared after the operation was about ten days, while the average time for the first appearance of motion was about two and a half months.

The general conclusions deduced from this study are as follows:

1. Transplantation of a peripheral nerve segment to bridge over a gap between the two ends of a resected nerve is a legitimate surgical procedure.

2. Under favorable conditions at least partial and at times complete restoration of sensation and motion may be expected to follow the operation.

3. Regeneration of the degenerated peripheral end is due to down-growths from the axis-cylinders of the central end.

4. From the slowness of this process the longer the time after operation the more favorable will be the results.

5. Sensation may return very early after operation, and as a rule precedes return of motion.

6. This rapid return of sensation is not due to down-growth of axis-cylinders or to conductivity of the transplanted fragment, but must be explained by collateral nerve supply.

7. In many cases very early return of motion after transplantation may be due to vicarious movements of other muscles than those formerly paralyzed, and not to a regeneration of the latter's nerve supply.

Reviews.

TWENTIETH CENTURY PRACTICE. An International Encyclopædia of Modern Medical Science. Edited by Thomas L. Stedman, M.D. In Twenty Volumes. Volume XVI.
New York: William Wood & Company, 1899.

This volume, which we have gone over pretty carefully, is perhaps the most interesting of the series. It deals with the subjects of Croupous Pneumonia, Cerebrospinal Meningitis, Dysentery, Yaws, Inflammation, Erysipelas, Simple Continued Fever, Relapsing Fever, and Typhoid fever.

In the opening article upon Croupous Pneumonia, by Dr. Andrew H. Smith, of New York, we are told that it is "an acute disease in which a specific parasite invades the air cells of one or more pulmonary lobes, where it grows in the fibrinous medium exuded from the functional capillaries and generates a toxin which infects the system at large."

Surely this definition does not admit the fact, which we believe is generally recognized, that the microorganism of pneumonia is capable of infecting the entire system, and we are somewhat in doubt as to what is meant by the term "functional capillaries." In that portion of the article which deals with the treatment of pneumonia, Dr. Smith states that as a heart stimulant in cases of circulatory failure with relaxed blood-vessels, strychnine takes the foremost rank, and he believes that the remedy may be pushed to the point of producing muscular twitching. We have already asserted our belief a number of times in the editorial columns of the THERAPEUTIC GAZETTE that the *continuous* use of strychnine in large doses is disadvantageous, and that it is to be used rather as a whip in cases of sudden collapse than as a constant stimulant, since it simply acts by nervous irritation. In connection with the use of digitalis, we regret to find that Dr. Smith is not very favorable to its employment — indeed, he speaks very strongly against its use, unless at the same time an arterial dilator is employed. This we regret, not because we do not believe that in many instances nitroglycerin should be combined with digitalis, but because it seems to us to be a sweeping decision against a drug which undoubtedly can be used in many cases with very good results. What Dr. Smith says of digitalis will have a tendency to prevent physicians from employing it in any case, when they should employ it in some and not in others.

In quoting Dr. Mays' statistics concerning the value of cold in the treatment of pneumonia, Dr. Smith evidently ignores the fact, also ignored by Dr. Mays, that in these statistics there is no differentiation between lobular pneumonia and lobar pneumonia, and therefore they cannot be considered as having great bearing upon the point at issue. In his *résumé* of the treatment of this disease, Dr. Smith tells us that the treatment should consist in an attack upon the pneumococcus through the medium of the blood with the object of causing the exudate when it escapes into the air-cells to be impregnated with the substances which will unfit it to serve as a culture medium. We confess that we have not found anything in medical literature or in practice up to the present time which in the slightest degree carries out this much to be desired effect.

In Dr. Sodré's article upon Dysentery, we are told that of all drugs recommended in the treatment of this disease that which has given the best and surest result is undoubtedly ipecacuanha. While the majority of the profession some years ago were in accord with Dr. Smith in this belief, we are inclined to believe that in the majority of cases of dysentery this method of treatment is not now commonly employed, having been supplanted chiefly by the aromatic sulphuric acid and magnesium sulphate treatment.

We regret that Dr. Kiliani in his article upon Erysipelas does not mention the use of ichthyol locally in the treatment of this disease. Surely, of all the local applications which have been employed, this is the most efficacious. Neither do we find any mention in this article of the employment of tincture of the chloride of iron, which certainly is receiving professional indorsement. Indeed, the whole question of the internal treatment of this disease is decidedly ignored.

In the article on Simple Continued Fever we find that amongst the synonyms are given sun-fever, gastric fever, catarrhal fever, mountain fever, and abortive fever, all of which

goes to illustrate the fact that the term "simple continued fever" is in many instances a cloak to our ignorance of the real condition which is present. We think that the majority of medical leaders at the present time consider that gastric fever, at least as it occurs in children, is in a great majority of cases due either to acute catarrh of the stomach or to typhoid infection; indeed, gastric fever is a term which is commonly employed to indicate a type of typhoid fever in which the gastric symptoms are particularly marked. So, too, abortive fever is a term which is sometimes employed to indicate cases of typhoid which run an unusually short course. Sun-fever is probably due to disorder of the nervous heat mechanism by exposure to the sun's rays, and it has been definitely proved that mountain fever is a true typhoid infection slightly modified by the physical surroundings of the patient.

The article on Typhoid Fever is written in two parts: the first by Dr. Thacher, who deals with the etiology and general pathology of the disease, and the second by Dr. Brannan, who deals with the symptomatology and treatment.

We are sorry that Dr. Brannan recommends meat broths, as we believe that all animal broths when given to typhoid fever patients afford excellent culture media for the development of the bacillus of Eberth, and also for the numerous other pathological microorganisms which are found in malignant activity in the alimentary canal during the course of this disease; for truly typhoid fever is associated with multiple infection. Neither do we think the description which is given as to the manner in which the cold pack is to be used is correct. Surely the patient who is first wrapped in a cold sheet and then wrapped in a large blanket is speedily placed in a hot moist pack, owing to the fact that the blanket retains the heat of his body, and evaporation, the most important factor in reducing temperature, is prevented.

Dr. Brannan, in mentioning Dr. Woodbridge's treatment of typhoid fever by the administration of antiseptic and purgative substances, quotes certain passages in Dr. Woodbridge's writings which it seems to us are antagonistic to general professional opinion, as, for example, that death is a really unnecessary consequence of typhoid fever, and that every case in which the above treatment is instituted sufficiently early in the course of the disease can be aborted. This is certainly a very dangerous statement and does not agree with our knowledge of the natural history of the disease; and while Dr. Brannan does not quote it with his indorsement, we notice that he is in favor of the so-called eliminative and purgative treatment. The statistics which he gives, however, in regard to the Woodbridge, Thistle, and other methods in typhoid fever, are truly inadequate to determine the value of any method of treatment. Those who have had a large experience with this disease know full well that it is by no means an uncommon occurrence for several hundred cases to pass through typhoid fever and for the mortality to be exceedingly low, and then the next hundred cases will have a very high mortality, the variation depending largely upon the susceptibility of the patient and the virulence of the infection. Thus Mason has recorded five different series, aggregating 242 cases, with five deaths, or a mortality of about two per cent; but the total mortality of 676 cases was 10.4 per cent. We are sorry that Dr. Brannan has emphasized this method of treatment, and has not emphasized other methods which we think are more valuable. We also regret that practically nothing is said about the use of alcohol in the treatment of cardiac weakness. While it is mentioned as a drug which may be used, no sufficient directions are given as to its employment.

It has been well said that in the reviewing of a good book or the criticism of a work of art, it is the custom to point out only the faults and none of the good points. It may seem to our readers that this custom has been carried out in reviewing the present volume. We have mentioned the points in which we disagree with the various authors; we now wish to add what we have already intimated at the beginning of this review, namely, that this volume is an exceedingly valuable addition to the series, that the articles are unusually good, and that, taking them all in all, they well represent modern medical thought.

PRINCIPLES OF BACTERIOLOGY. A Practical Manual for Students and Physicians. By A. C. Abbott, M.D. Fifth Edition, Enlarged and Thoroughly Revised. Copiously Illustrated in Black and Colored Plates. Philadelphia: Lea Bros. & Co., 1899.

There are few writers in purely scientific medicine who are skilful enough to present the facts before them in so interesting and practical a manner as to be rewarded by a call for five editions within eight years of the appearance of the first, yet Dr. Abbott has embodied so much useful information in his text that this creditable fact holds true in

regard to his little volume, which is a small octavo of about 600 pages, including the index. The earlier chapters deal with the consideration of the first studies which were made of microorganisms, and then with the description of various parasites of a microscopic character. Passing on from this subject he deals with the principles of sterilization, with the principles involved in the methods of isolating bacteria, with those of the properties of nutrient media and the technique of bacteriological investigation, with a description of the various forms of apparatus which are needed for the study of these important organisms. The first part of the work concludes with a chapter upon inoculation of animals and their post-mortem examination. The second deals with the methods which should be employed to obtain material, with the processes of suppuration, septicemia, tuberculosis, diphtheria, typhoid fever, and with organisms which are capable of infecting man and the lower animals, as for example the bacillus of anthrax and tetanus. The concluding chapters deal with infection, with a bacteriological study of water, air, and soil, and the methods of testing disinfectants and antiseptics. An appendix describing the apparatus necessary for beginners in the bacteriological laboratory closes the volume.

To the ordinary practitioner who has not the opportunity to do bacteriological work, the second part of the volume will prove most interesting and useful, particularly the chapters dealing with infection and the methods of testing disinfectants, antiseptics, etc. The type in this book is unusually good, and this, combined with the easy style of the writer, makes it a delightful one to read, as well as of increasing one's information in regard to this ever-increasing subject.

URINARY ANALYSIS AND DIAGNOSIS BY MICROSCOPICAL AND CHEMICAL EXAMINATION. By Louis Heitzmann, M.D. One Hundred and Eight Original Illustrations.
New York: William Wood & Co., 1899.

Dr. Heitzmann tells us that in adding another to the long list of works on the examination of the urine, he has been guided by the fact that microscopical examination, and especially microscopical diagnosis, have not received as much attention in text-books as their importance calls for, while chemical analysis has been thoroughly treated in a large number of works. For this reason he naturally devotes himself chiefly to the study of the microscopic examination of the urine, but begins his volume with an introductory, which is followed by chapters upon the chemical examination of the urine, in which he deals with its general physical and chemical properties, and its normal and abnormal substances. In the second part he takes up the microscopical examination, and considers the various forms of apparatus which are employed and the character of the bodies which are seen in the urine by the aid of the microscope. The first part takes up only 33 pages, but the second part, or that dealing with the microscopical examination, takes up 113 pages; while the third part, which is entitled "Microscopical Urinary Diagnosis," deals with the lesions which are found in the various forms of renal and genito-urinary diseases. This part extends over nearly 100 pages.

We do not see in looking over this book that it differs materially from a number of other volumes upon the same subject that we have reviewed in the last year, except that it is more thorough and wider in its scope, not only dealing with substances which are ordinarily found in the urine, but with extraneous substances such as wool-fiber, starch globules, lycopodium granules, and various forms of vegetable matter. The book is a first-rate one, but does not seem to have any distinct originality, a characteristic which it would be almost impossible for it to present.

A MANUAL OF ORGANIC MATERIA MEDICA. Being a Guide of Materia Medica of the Vegetable and Animal Kingdom, for the Use of Students, Druggists, Pharmacists, and Physicians. By John M. Maisch, Ph.M., Phar.D. Seventh Edition, Revised by Henry C. C. Maisch, Ph.G., Ph.D. Copiously Illustrated.
Philadelphia: Lea Bros. & Co., 1899.

As we have pointed out in reviewing earlier editions of this well known book, it is one which will prove much more useful to the student of pharmacy than to the student of medicine, and that it does meet a distinct need in pharmaceutical literature is evidenced by the fact of its being in the seventh edition. The book is a small octavo of about 400 pages, and deals with the origin, habitat, description, allied plants, constituents, and properties of the various drugs which are official. The portions of the text devoted to the consideration of the properties of the various drugs are exceedingly condensed, too much so to permit of the information being used in therapeutics. On the other hand, it is a most excellent summary of materia medica from a botanical point of view, and in those schools of medi-

cine in which the somewhat old-fashioned method of teaching materia medica by studying the botany of medicinal plants is still carried out, the book will doubtless continue to be popular, as it is undoubtedly the best one of this class. From what we have already said, it is evident that it fully meets the needs of pharmacy students.

ANNUAL AND ANALYTICAL CYCLOPEDIA OF PRACTICAL MEDICINE. By Charles E. de M. Sajous, M.D., and 100 Associate Editors and Corresponding Editors. Illustrated with Chromolithographs and Maps. Volume III.
Philadelphia: F. A. Davis Co., 1899.

It is but a few months since the second volume of this interesting and complete work edited by Dr. Sajous appeared. The criticism which we made in the earlier issues of the THERAPEUTIC GAZETTE concerning the predecessors of Volume III holds true also in regard to this one, namely, that the volumes attempt to deal with medical literature scattered over too large a number of years. On the other hand, this very wide scope enables the various contributors to give quite extensive articles concerning the various subjects which they discuss, and the labor of compiling such an enormous amount of material (for the book is a large one of nearly 600 pages) must have been very great. The present volume begins with the subject of Dislocation and closes with the discussion of Infantile Myxedema.

THE INTERNATIONAL MEDICAL ANNUAL AND PRACTITIONER'S INDEX FOR 1899.
New York and Chicago: E. P. Treat & Company, 1899.

This, the seventeenth, issue of the Medical Annual comes to us possessing the many good characteristics of its predecessors. The book is designed, as most of our readers probably know, to give a brief *résumé* of the important points which have been gathered together from medical literature during the year 1898. It opens with a dictionary of new remedies, representing the therapeutic progress for the year, by Dr. Murrell of London, and closes with a brief monograph upon pathogenic bacteria in the human subject by Shattock, which is illustrated by a number of chromolithographs designed to show various bacteria, the Widal reaction, and in general describe the microorganisms under consideration. While there is no particular part of this book which seems to us worthy of mention above another, it is altogether a most creditable summary of medical literature, and the seventeenth volume deserves the success obtained by its predecessors.

ENCYKLOPAEDIE DER THERAPIE. Herausgegeben von Oscar Liebreich, Dr. Med. Unter mitwirkung von Martin Mendelsohn, und Arthur Würzburg.
Berlin: Verlag von August Hirschwald, 1899.

This volume of Liebreich's Encyclopedia, which we have reviewed during the past four years in the THERAPEUTIC GAZETTE, extends from the subject of Mammary Neuralgia to Pharyngitis, and covers 320 pages. It will be remembered that although it is entitled an Encyclopedia of Therapeutics, it is in reality an encyclopedia of medicine in general, and deals with subjects so distantly connected with therapeutics as mediastinal tumors. The present volume is exactly like its predecessors in scope, and contains articles by such well known men as Zuntz, Lesser, Liebreich himself, Riess, and Eulenburg; and when it is stated that these articles are creditable to the authors, and we remember the high standing of these writers in German literature, it can be readily understood that the volume is worth possessing by those who are able to read German.

DISEASES OF THE EAR, NOSE, AND THROAT, AND THEIR ACCESSORY CAVITIES. By Seth Scott Bishop, M.D., D.C.L., LL.D. Second Edition, Thoroughly Revised and Enlarged. Illustrated. $4.00.
Philadelphia: The F. A. Davis Co., 1899.

Scarcely two years ago we took pleasure in reviewing the first edition of Dr. Bishop's book upon Diseases of the Ear, Nose, and Throat, and Their Accessory Cavities. As we pointed out at that time, the book is almost too freely illustrated, if that is possible, and certainly no one can say that it does not represent the author's individual ideas, for it is emphatically, at least in certain portions of it, a mirror of his views. On the other hand, there are portions of the work which are thrown together in a more careless way than we would expect to find in the second edition of so useful a manual; notably is this the case in the chapter which deals with the use of antitoxin in diphtheria, where the author has provided the reader with abstracts of the writings of others instead of simply quoting other authors and summarizing literature in a general way.

The present edition has been entirely reprinted in smaller type, which is, however, of excellent size, and contains much more text to the page than its predecessor. Some of the colored lithograph plates which illustrated the first edition, and which were evidently taken from Dr. Sajous' book on this subject, have been replaced by others which are quite different in their appearance, and which,

while they illustrate very well indeed the facts which the author desires to illustrate, do not possess the natural appearance of the earlier ones. The earlier book contained less than 500 pages; this contains 551, and as we have said, there is much more material to the individual page, so that the second edition is considerably larger than the first.

A TEXT-BOOK ON PRACTICAL OBSTETRICS. By Egbert H. Grandin, M.D. With the Collaboration of George W. Jarman, M.D. Second Edition, Revised and Enlarged. Illustrated. $4.00.
Philadelphia: The F. A. Davis Co., 1899.

This second edition is considerably larger than the first, and is designed to represent in every detail the present views which are generally held by advanced obstetricians in regard to obstetrical surgery and the puerperal state. The book is well printed and well illustrated by figures from life and by original woodcuts, which illustrate various normal, pathological, and operative conditions. The index is, however, incomplete.

The fashion at the present time of illustrating books by means of photographs does not always give the most information to the reader, for in these photographs certain anatomical details are frequently lost, and the absence of color prevents differentiation between various tissues. Thus in the present volume, illustrations showing the method of expressing the placenta and of catheterizing a woman do not add really very much to the value of the text, and Plate 37 is particularly susceptible to this criticism.

We have read with interest what the authors have to say in regard to the use of ergot in labor. They believe that when the physician is satisfied that the uterus is empty, ergot should be administered in the dose of one drachm by the mouth — we presume in the form of fluid extract. They recognize, however, that the necessity for the administration of ergot is disputed on the ground that contraction of the uterus ought to take place physiologically; but on the other hand they believe that women rarely approach and pass through labor in a strict physiological manner, and that therefore this drug, which they think can do no harm, assists in maintaining the contraction of the uterus and thereby hastens involution. We are glad to note that they emphasize the fact that during labor this drug has no place. Ignorance of this fact has produced a vast amount of harm; it is only, as they say, when the uterus is completely empty that the administration of this drug is justifiable.

In the treatment of uterine inertia the authors recommend the use of twenty grains of quinine by the mouth or thirty grains by the rectum, in addition to uterine massage, and if the exhaustion is profound and the fetal heart weak, the application of the forceps. As is well known, the use of quinine is believed by some eminent obstetricians to be useless and prone to cause hemorrhage. However, this is a disputed point.

THE NEWER REMEDIES. A Reference Manual for Physicians, Pharmacists, and Students. By Virgil Coblentz, A.M, Ph.M., Ph.D., F.C.S. Third Edition, Revised and Enlarged.
Philadelphia: P. Blakiston, Son & Co., 1899.

We can most cordially recommend this little manual of about 150 pages to our readers. It costs one dollar and contains adequate descriptions of practically all the newer remedies, including their synonyms, sources, methods of preparation, tests, solubilities, incompatibles, medicinal properties and doses as far as known, together with sections on organotherapeutic agents and indifferent compounds of iron. After the name of each chemical substance its formula is given, and the text affords us a most excellent summary of valuable knowledge. While it is of course true that many of the remedies named are not of great value, it is a most useful book to have at hand for reference.

THE ANATOMY OF THE CENTRAL NERVOUS SYSTEM OF MAN AND OF VERTEBRATES IN GENERAL. By Prof. Ludwig Edinger, M.D. Translated from the Fifth German Edition by Winfield S. Hall, Ph.D., M.D., Assisted by Philo Leon Holland, M.D., and Edward P. Carleton, B.S. Illustrated.
Philadelphia: The F. A. Davis Co., 1899.

A number of years ago Professor Riggs, of St. Paul, prepared for American students a translation of the earlier German edition of Professor Edinger's well known work upon the Anatomy of the Central Nervous System. The present edition, which is prepared from the fifth German edition by Prof. Winfield S. Hall, with the assistance of Dr. P. L. Holland and Edward P. Carleton, all of whom are teachers in Chicago, is a great improvement over the earlier editions, largely because Professor Edinger has embraced the opportunity of improving his original German work within the last few years.

The present volume is a large octavo of 450 pages, well printed, and contains 258 illustrations designed to render lucid the anatomical facts which are stated in the text. If we remember rightly, when we reviewed the first American edition of this work we

expressed our regret that in reproducing the illustrations the lettering of the cuts had not been changed into English, but that the German anatomical terms had been retained. This objection has to be sure been set aside to a certain extent by the legends which are attached to some of the illustrations, in which translations of the German words are given; but on the other hand certain illustrations marked with German anatomical terms are not provided with such translations, and to those who are not familiar with German literature this may cause some difficulty in studying the matter, which is by no means easy to the ordinary student. At the same time, we cannot read the volume without being impressed with a fact already familiar to those who are in touch with neurological literature, namely, that Professor Edinger has provided us with a valuable contribution to medical literature, and one which should be in the hands of all those who are interested in neurology.

We congratulate the translators upon the excellent work which they have done, and upon their careful preparation of the text for American readers.

MATERIA MEDICA AND THERAPEUTICS. By J. Mitchell Bruce, M.A., M.D.
Philadelphia: Lea Brothers & Company, 1899.

This is an advanced edition of Dr. Bruce's well known little summary of Materia Medica. It is not designed as a practitioner's handbook, but as a student's *vade-mecum* in which the names, origins, actions, and toxicology of important drugs are discussed. Careful descriptions are given of the physical and chemical characteristics of the various substances, and it is because of these concise and lucid characteristics that the book has proved one of the most successful contributions to therapeutic literature that we know of. The concluding part of the work deals with general therapeutics and the foundations of rational treatment, and is exceedingly valuable, being practically a general discussion of the rules governing therapeutic procedures in the treatment of various diseases.

AN EPITOME OF THE HISTORY OF MEDICINE. By Roswell Park, A.M., M.D. Second Edition. Illustrated with Portraits and Other Engravings.
Philadelphia: The F. A. Davis Co., 1899.

As Dr. Park well says in his preface, it is extraordinary that a second edition of a work of this character should be called for within a year after the appearance of the first, and it illustrates the fact that the medical profession was in need of such a summary of historical matters medical, and also that they are desirous of learning something concerning the earlier history of medical affairs in Europe and America.

As we pointed out in our review of the first edition, the book not only deals with those individuals who may be truly called the "fathers of medicine," but also with many of the eminent medical men of this century in England and America; and the last chapters are illustrated by pictures of Benjamin Rush, George B. Wood, R. Dunglison, the elder Flint, Physic, Sims, and Agnew. A picture is also given of the first administration of ether as an anesthetic, in the Massachusetts General Hospital. Naturally a picture of Lord Lister accompanies the article upon antiseptic surgery.

LABORATORY WORK IN BACTERIOLOGY. By Frederick G. Novy, Sc.D., M.D. Second Edition, Revised and Enlarged. Illustrated.
Ann Arbor: George Wahr, 1899.

Dr. Novy has the knack of preparing facts in such a way as to make them prove very useful to students, and the second edition of his little manual on Bacteriology will increase his reputation as an easy writer and as a good teacher of bacteriological technique.

The present volume contains the necessary illustrations to render the experiments he suggests entirely clear, and opposite most of the descriptions of important microorganisms is placed a blank page upon which the student is supposed to draw the microorganism which he is studying. In other words, the book is designed not simply as a description of pathogenic and other microorganisms, but also as a working manual for the laboratory. It seems to us to meet in every way the requirements of such needs in teaching, and we believe that the second edition will be even more successful than the first.

THE MEDICAL COMPLICATIONS, ACCIDENTS, AND SEQUELÆ OF TYPHOID OR ENTERIC FEVER. By H. A. Hare, M.D., B.Sc. With a Special Chapter on the Mental Disturbances Following Typhoid Fever, by F. X. Dercum, M.D.
Philadelphia: Lea Brothers & Company, 1899.

This is an octavo volume of a little less than 300 pages devoted to the subject named in the title, and considers cases occurring in the author's practice, and also a discussion of the very large literature which exists at the present time concerning this very interesting disease.

Typhoid fever occurs in so many aberrant

forms and presents so many puzzling manifestations that in many instances it fails to correspond in any way in its course to the classical descriptions in text-books, and this book is designed to throw light upon such complications.

A TEXT-BOOK OF OPHTHALMOLOGY. By Ernest Fuchs. Authorized Translation from the Seventh German Edition, by Alexander Duane, M.D. Copiously Illustrated. Second American Edition.
New York: D. Appleton & Co., 1899.

There are very few books which undergo the process of translation which are sufficiently popular to attain the honor of second editions in this country, and when it is considered how many excellent books on ophthalmology have been written by English and American physicians, it is surprising that even such a useful work as that of Professor Fuchs should have been so successful. Doubtless a large amount of this success depends upon the careful work which has been performed by the translator and editor, Dr. Duane, who is favorably known in America not only to ophthalmologists in particular, but also to the medical profession in general.

Much space of the book is saved from time to time by printing comparatively unimportant matter in small type. The illustrations, as a rule, show what they are intended to show, although they are not as well executed as we are accustomed to see them in American books at this time.

We are glad to see that the use of antitoxin is recommended in diphtherial conjunctivitis, although, as is well pointed out by the editor, this condition is rarely met with in America. We doubt not that this edition will prove as popular with the profession as its predecessor.

THE STUDY OF THE HAND FOR INDICATIONS TO LOCAL AND GENERAL DISEASES. By Edward Blake, M.D.
London: Henry J. Glaisher, 1899.

A few months ago a small brochure with a pliable cover came to our hands with the title borne by this volume, which is an octavo of a little over 100 pages, and is the second edition of the little handbook to which we have just referred. The demand for the earlier edition has caused the author to give some care to the preparation of the text, which has also been enlarged.

A large part of the present volume deals with the changes which appear in the skin of the hand in the various forms of skin disease, and the rest of it is devoted to the changes in the contour and character of the hand in various pathological conditions. The volume closes with quite a copious bibliography on such diseases as achondroplasia, acromegalia, acroparesthesia, and other comparatively rare diseases involving the hand. Quite a full index completes the volume.

LEGAL DECISIONS AFFECTING PHYSICIANS, DENTISTS, DRUGGISTS, AND THE PUBLIC HEALTH. Together with the Proof for the Prosecution of Unlicensed Practitioners, etc., etc. By W. A. Purrington.
New York: E. B. Treat & Co., 1899.

This is an exceedingly useful little book of about 100 pages, the function of which is well described in its title, namely, to bring to the hands of medical men information about their legal status, in the various States of the Union, and about the legal relations which they hold with patients and other practitioners.

Various ruling cases are cited which are designed to establish precedents for legal decisions in regard to the matters under discussion. The price of the book is fifty cents, and it is well worth purchase by every physician.

CLINICAL LECTURES ON NEURASTHENIA. By Thomas D. Savill, M.D.
London: Henry J. Glaisher, 1899.

Dr. Savill is already well known to medical readers, as he has already published a small volume upon Epidemic Skin Diseases, and is about to bring out a small handbook upon the Diagnosis, Prognosis, and Treatment of Diseases of the Nervous System. The present small octavo volume, of a little over 135 pages, consists in part of lectures which he delivered in a postgraduate course in 1891, and again in other lectures which were delivered during the years 1897 and 1898. Some of them have already appeared in the *Clinical Journal*. Dr. Savill's object in printing these lectures is to present in as clear and lucid a manner as possible his views in regard to the difficult questions which arise in the diagnosis of neurasthenia from symptoms produced by distinct and true pathological changes in the nervous system.

It is well known to those of experience that at times the symptoms of neurasthenia ape those which are produced by true nervous lesions in a manner which is difficult to differentiate. Dr. Savill seems to have successfully considered the various points which are necessary in the study of these cases. The text closes with a list of the more important contributions to the study of neurasthenia which have been made by American and foreign authors and with a copious index.

A MANUAL OF ANATOMY. By Irving S. Haynes, Ph.B., M.D. With 134 Half-tone Illustrations and 42 Diagrams.
Philadelphia: W. B. Saunders, 1899.

This addition to the rather copious elementary literature on anatomy will be fairly well justified by the illustrations alone, which are in the main admirable reproductions of photographs from dissections. The viscera and the relations to the surface of the body have been accorded the most prominent place in illustration and description. The study of the bones and of the joints, and of those minute parts which require special preparation for the dissection, has intentionally been omitted. The book seems excellently arranged for the student, and should serve as a help in the dissecting-room. The index is particularly to be recommended, on account of its accuracy and completeness.

Correspondence.

LONDON LETTER.

BY RAYMOND CRAWFURD, M.A., M.D. OXON., M.R.C.P. LOND.

Since our last letter the first volume of "A Manual of Surgical Treatment," by Messrs. Watson Cheyne and Burghard, both surgeons to King's College Hospital, has come to hand. The work is to be in six volumes, of which the remaining five will be issued at intervals of not less than six months. The work is in no sense a dictionary, and only aims at recording those methods that have commended themselves as best in the daily practice of the writers. One great merit of the volume before us is that the patient is not, as in most treatises of the kind, relegated to oblivion as soon as he is removed from the operating table, but a great deal of attention is lavished on the details of after-treatment. If the remaining volumes maintain the high standard of the first, the authors will assuredly have made a very substantial addition to the surgical library of every class of practitioners. The work is to be published in America by Lea Brothers & Co., of Philadelphia, and each volume may be had for the modest outlay of three dollars.

Dr. Hale White made a further communication to the Clinical Society on "Three Cases of Right Colotomy for Chronic Colitis." The first case was that of a woman with membranous colitis of twenty years' standing, which had brought her to the last stages of exhaustion. The general tenderness of the colon pointed to extensive disease. From the time of the colotomy she rapidly gained ground. The artificial anus was closed after a year, and now a year and a half later the patient is to all intents and purposes in perfect health. In this, as in the succeeding two cases, the colotomy was performed in two stages, and the formation of membrane ceased immediately the bowel was stitched to the skin, and prior to opening it. From this Hale White contends that the formation of membrane is to some extent a neurotic phenomenon, susceptible of reflex inhibition, and certainly the clinical history of these patients warrants this suggestion. The second case presented all the features of the first, but the symptoms were only of one and a half year's standing; four months of perfect rest to the colon restored the patient to perfect health. The third case, that of an adult male, was treated by cæcotomy with equally good results as regards the restoration of health, but he served to illustrate one disadvantage of cæcotomy as against right colotomy in that fluid feces escaped from the wound when he stooped at work. Another drawback of cæcotomy is that it is almost impossible to prevent some feces finding their way into the colon. In none of the cases was it found necessary to wash out the bowel from the artificial to the natural anus. Six months seemed to be the minimum period for which the artificial anus should be left open, and as there was no difficulty in closing the orifice even after much longer periods, it was desirable to rest the colon for as much as a year. Hale White strongly recommended right colotomy for severe cases of the following conditions: (1) intractable membranous colitis; (2) all forms of chronic ulceration of the colon that had resisted prolonged medical treatment (cases of chronic dysentery were in all likelihood amenable to this line of treatment); (3) cases of idiopathic dilatation of the colon. In the discussion that followed the paper, Charles Symonds mentioned a case of chronic ulceration of the rectum of a similar type that he had relieved by stretching the sphincter ani.

At the same meeting of the Clinical Society an interesting discussion was carried on as to the treatment of chronic empyema of the maxillary sinus between the advocates on the one hand of simple drainage through a tooth socket, and on the other hand the champions of more radical measures. The

whole question appeared to turn very much on the nature of the pathological condition. Semon and St. Clair Thomson were of opinion that tradition was correct in referring the very large majority of cases of suppuration in the maxillary antrum to dental trouble. St. Clair Thomson recorded a case of from two to seven years' duration, that had been completely cured in eight weeks by simple drainage by a spiral drainage-tube through an alveolus. Eve and Hovell, on the other hand, maintained that in a very large number of cases the condition was due to papillary outgrowths from the lining membrane of the antrum, so abundant in some cases as to completely fill the chamber and occlude the outlets. They urged free opening of the antrum through the canine fossa, so that the cavity could be inspected and the growths removed. In some cases they had found it necessary to make a counter-opening through the inner wall of the antrum at the level of the floor of the inferior meatus. The cavity was first packed with gauze and afterwards treated by antiseptic irrigation. The general feeling of the meeting was strongly in favor of the established procedure of first attempting simple drainage through the alveolus, combined with daily irrigation of the cavity with some simple alkaline lotion. The latter process was one that could easily be entrusted to the patient himself. Even in the cases of polypoid outgrowth, which it was generally agreed were extremely rare, there could be no objection to a preliminary trial of this method, which in no way precluded subsequent recourse to the more radical procedure, if that became necessary.

Dr. Leslie Phillips, of Birmingham, writes zealously in favor of antipyrin as a curative drug in cases of nocturnal incontinence of urine. There is, of course, no novelty in the employment of this particular drug for the condition in question. A very superficial survey of the pathology of enuresis will demonstrate the futility of any drug for all cases. We can hardly conceive of a single remedy alike applicable to oversensitiveness of the bladder, to weakness of the sphincter, to hyperacidity of the urine, and to a riotous nerve system. To trust to any drug in so complex a condition is to court failure, and contrariwise, we are of opinion that many drugs will be found useful, but only as adjuncts to other and more important general measures.

Dr. Kirkpatrick read a paper before the Royal Academy of Medicine in Ireland on "Room Disinfection by Formic Aldehyde." The method employed was to vaporize ten-grain formalin tablets in a Zimmerman's "alformant" lamp. He showed that the process, while extremely simple, was far more effective than disinfection with such gases as sulphurous acid, bromine, and chlorine. A more detailed report was communicated by Dr. Littledale of actual experiments on test objects such as threads steeped in emulsions of various organisms. These threads were variously exposed, either free, or wrapped in filter-paper, or concealed in the pocket of a coat or between the leaves of books. Nine hours' exposure completely devitalized all those freely exposed, so that no growth could be obtained on nutrient media, while those more closely concealed seemed hardly to be affected at all. One experiment with sputum is of special interest from its bearing on disinfection of tuberculous material. Sputum was openly exposed on cover-glasses, on which it had been let dry in the oven at 37° C., and after exposure for nine hours no growth took place in broth for two days—that is, until the surface layer digested off and the deep surface was exposed. In dried pus, exposed on gauze, the effect was far more destructive.

In an admirable article in the current number of *Brain*, Dr. James Collier has investigated the correctness of Babinski's "toe-phenomenon," together with other conditions of the plantar reflex. Substantially he confirms the observations of Babinski. He finds that in almost all cases of lesions of the pyramidal tracts the form of plantar reflex is changed from the normal adult flexor type to a type closely resembling the infantile extensor response. In infants, up till the age of learning to walk, the succession of contraction of muscles in the plantar reflex is entirely different from that of the adult; the adult type seems to be acquired along with full volitional control over the legs—that is to say, usually between the second and third years. In lesions of the pyramidal tracts this change of type of the plantar reflex is one of the first signs to appear, and the last to disappear when the lesion is temporary; in some cases it is the only unquestionable objective sign. This form of reflex is never found under other conditions, and is therefore a most valuable indication of structural change in the pyramidal system. With regard to the condition of the normal plantar reflex during sleep, he finds that the reflexes are diminished, but the infantile and adult

forms respectively are preserved, except in some children up to the age of twelve years, where in deep sleep the infantile form of reflex returns. In cases in which the cord is completely severed transversely, the extensor reflex response is the only reflex phenomenon present in the lower limbs. This extensor reflex is never present in functional cases, although the flexor reflex response may be absent or difficult to elicit. This phenomenon, therefore, is a guide of first importance in distinguishing functional paralyses from lesions of the pyramidal systems. In tabes and peripheral neuritis, in cerebral and cerebellar tumors, not involving the pyramidal system, in neurasthenia, chorea, paralysis agitans, poliomyelitis, myopathy, and sciatica, the reflex is present in the flexor response.

Dr. Collier has also investigated the causation of pes cavus in spastic states. He shows conclusively that Duchenne's theory, that the pes cavus of spastic conditions is due to weakness of the interossei, is untenable; the condition is, however, intimately associated with the extensor response in the plantar reflex, and is produced by a state of reflex hypertonicity preponderating in those muscles which respond most vigorously in the plantar reflex. In all such cases of pes cavus evidence of increased tone in certain muscles can be demonstrated.

PARIS LETTER.

By A. R. Turner, M.D. (Paris).

At a discussion that took place at the Society of Surgery on the 10th of May, the treatment of tuberculosis of the testicle was brought up and examined by several of the most eminent members of that body. Dr. Félizet, surgeon of the Paris hospitals, began by stating the method he employed in children, and which he has been using during the last fifteen years. As the skin of the scrotum does not give a good line of suture, he makes the incision back of the scrotal sac, near the perineum. The testicle is pushed back and an anteroposterior incision is made half-way between the middle line and the genito-crural line. This incision is two centimeters long for children and four or five for adults. The cremaster is cut in part and the testicle is enucleated. The mass is drawn down as far as possible, and two artery-forceps are placed as high as possible on the funiculum, and removed after forty-eight hours. Cicatrization takes place in a few days. When ulceration already exists on the scrotum an incision is made around the latter and the same method is carried out, two or three sutures being placed on the skin. The speaker said he would try Doyen's method of "broiement" crushing of the arteries.

The subject of castration in tuberculous lesions is *sub judice*, some authors, like Dr. Lejars or Dr. Quénu, being adverse to such radical measures.

Dr. Quénu spoke on this subject, and said he thought it better to keep as much as possible of the testicle unless this organ was completely invaded. Where the lesions were localized, incision of the foci and cauterization with chloride of zinc are indicated. In case the epididymis was invaded, resection of the morbid part must be carried out. In subacute lesions opening of the abscess and cauterization were to be recommended.

Dr. Nimier, army surgeon, Dr. Lucas Championnière, Dr. Reclus, and Dr. Théophile Anger were of the same opinion as Dr. Quénu, and preserve as much as they can of the testicle.

On the 17th of May this question was taken up again by Dr. Potherat, who said he had always seen tuberculosis supervene in the other testicle after castration. Such a result seems to have been the case with a number of surgeons, and this recurrence of the disease takes place more or less rapidly. Castration to be effective would necessitate the removal of the vasa deferentia, the two vesicles, and the prostate. Besides, nothing demonstrated that the infection takes place from the testicle towards the prostate, and it would be rash to admit that castration could influence the lesions of the prostate. The speaker concluded by saying that from a moral point of view castration was not to be recommended, and to his mind the best treatment consisted in removing all foci with the bistoury, and suturing if possible.

Dr. Bazy, surgeon of the Beaujou Hospital, showed a patient who had been castrated on one side only, and in whom there was already infection on the other side.

Dr. Monod described his treatment of hemorrhoids, which was different from that of Whitehead. Two separate purgatives were given in succession, but no enema. Chloroform is used as the anesthetic, and dilatation made with Trélat's speculum. The hemorrhoidal excrescences are then seized with clamps, which are placed in a direction parallel to that of the rectum. All the tissue

in front of the clamps is then removed and sutures made through the mucous membrane. No cutaneo-mucous membranes were thus obtained. The results had been excellent. Dr. Reclus said that his method resembled very much that of Dr. Monod, but he used cocaine instead of chloroform. Drs. Pozzi and Fillaux said they preferred to use the thermocautery. Dr. Pozzi gave as reasons for this course the fact that narrowing of the anal orifice was apt to supervene after excision of the mucous membrane.

The formula employed by Dr. Lucas Championnière in the treatment of burns may be of interest. He uses the following ointment:

Vaselin, 100 grammes;
Essence of thyme,
Essence of origanum,
Essence of verbena,
Essence of geranium, āā 0.25 centigrammes;
Naphtolate of soda, 1 to 5 grammes.

The following is the treatment used by Dr. Grasset, the celebrated neurologist of Montpellier, in the treatment of emphysema:

1. Twenty days every month give iodide of potassium 10 grammes, water enough to make 300 grammes; one large spoonful at each meal.

2. The next ten days take at each meal a spoonful of arsenate of soda 10 centigrammes, water 300 grammes.

3. Every week or every ten days take on going to bed a pill of 10 to 15 centigrammes of aloes.

4. Suppression of tobacco and alcohol. Milk at each meal.

5. If possible compressed air baths.

At a recent discussion at the Academy of Medicine, the question of the treatment of cysts of the liver was brought up, and Dr. Dieulafoy, professor of clinical medicine at the Hôtel Dieu, spoke on this subject. The question was to decide whether it is best to tap or to perform an operation. In the simplest cases, that are quite recent, it is sufficient to tap them. However, this very simple operation may be followed by the most untoward results, such as syncope and urticaria. Dr. Chauffaud has cited a case where a simple exploratory puncture had been followed by urticaria, status epilepticus, and death in twenty-five minutes. In such cases it is readily conceived that there being an excess of liquid in the cavity, there is filtration through the orifice.

Laparotomy, according to surgeons, is a very benign operation in such cases.

Dr. Dieulafoy comes to this conclusion: First, in old cysts that may have suppurated, degenerated, or which have adherences, laparotomy is to be resorted to; secondly, simple tapping with aspiration in recent uncomplicated cases is advisable; thirdly, once the trocar is in, one should remove as much as possible of the liquid, and take care not to leave any quantity. In this way all accidents are obviated. Dr. Dieulafoy said he did not believe in using injections of various antiseptics, such as corrosive sublimate, as is recommended by Baccelli.

The question of sanatoria is of course being very much discussed at present in France, and at the Society of Therapeutics a certain number of resolutions showed the drift of medical opinion on this subject. Far from carrying out the system of large sanatoria such as those established in Germany and Switzerland, medical men in France seem to prefer small sanatoria with twenty to thirty beds, or even a smaller number, where the physician in charge will be more directly in contact with his patients. The following resolutions were passed:

The treatment by sanatoria as a means of insuring hygienic discipline and dietetics is the best.

Sanatoria should be established in places where the climate is naturally suitable.

Small sanatoria with a restricted number of beds should be founded in France, in various climates, according to the needs of the patients.

The Society of Therapeutics considers it necessary to have stations so placed that after a summer cure a winter cure may be carried out in a resort not too far distant from the first.

On account of the infectious nature of the disease, admitted by physicians nowadays, the use of ordinary wards for consumptives should be forbidden. Speaking of the latter part of this resolution I can cite the Boucicault Hospital as being one where these ideas are carried out almost to perfection. The "B" Pavilion is exclusively given over to consumptives, and it is almost a small sanatorium in Paris. I intend in my next letter to give a description of this new hospital, which is the finest in France.

WOUND OF THE HEART.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: On August 11, 1897, I was hurriedly called to see a colored man, forty-five years old, six feet high, and weighing about 185 pounds,

who had been fatally stabbed some thirty or forty minutes before my arrival. At every heart beat there gushed from a small wound, directly below the left nipple, between the fifth and sixth ribs, a wave of blood. There was another wound ten inches long, extending from the angle of the eleventh rib downward and forward toward the linea alba, and through the external oblique and transversalis muscles. On passing the index-finger into the small wound lying over the heart a cut could be distinctly felt in the wall of this viscus, apparently entering the right ventricle. The external bleeding was checked, and the patient was stimulated with strychnine and nitroglycerin hypodermically. While the long wound was being sutured the patient regained consciousness; he called me by name, and gave an intelligent account of the conditions which led up to the assault made upon him. He lived for about two and a half hours after receiving his wound. The autopsy showed that the diagnosis as to the position of the heart wound was correct, and that it was large enough to admit the small finger.

Very respectfully yours,

J. O. RUSH, M.D.

COLT, ARK.

TREATMENT OF CEREBROSPINAL MENINGITIS WITH ANTISTREPTOCOCCIC SERUM.

To the Editor of the THERAPEUTIC GAZETTE.

SIR: An epidemic of cerebrospinal meningitis prevails here in Kansas as well as in some other localities this spring, and I wish to report a case which came under my care—not that I can add anything new as to the history, etiology, or pathology of the disease, but to present the treatment which was resorted to in my case.

May D., a strong, robust girl of fifteen, was taken sick on the 28th day of April, 1899, and I was called to see her on the morning of the 29th, at 5 A.M., when I found her suffering with intense pain in the head, which she described as "throbbing pains;" neck rigid; head thrown back; temperature 101° F.; pulse 120; pupils dilated; and all the other symptoms of the disease. The patient very soon after this became unconscious, and the pulse very variable, ranging in an hour from 50 to 120, and was different every time it was counted. Dr. J. P. Lewis, of this city, was called in consultation, and by 11 A.M. we began the use of the antistreptococcic serum, giving ten cubic centimeters at that time hypodermically, and another injection of the same amount at 4 P.M. of the same day.

The next morning the patient was semiconscious, and ten cubic centimeters was again given. On the third day the serum was used, the mind at this time being perfectly clear. On the fourth day the fourth dose was administered, and on the fifth day the fifth dose, with a constant and marked improvement, so that on the sixth day the serum was omitted. On the seventh day, the right knee-joint being badly swollen and painful, ten cubic centimeters of the serum was injected into the lower limb near the knee. Previous to this I had injected it into the subcutaneous tissue of the back, over the scapula. In a very few hours after this last injection the pain disappeared, and the swelling of the knee subsided.

From this time on recovery was rapid and uninterrupted.

It has been sufficiently demonstrated that by using antistreptococcic serum, the streptococcus can be antagonized and an animal rendered immune against that particular germ, but whether the streptococcus is found in sufficient quantity in meningitis to justify the use of the antistreptococcic serum I do not know.

Weichselbaum claims to have discovered the germ of cerebrospinal meningitis, and calls it the diplococcus intracellularis meningitidis. Whether this serum destroyed enough streptococci to make such a marked improvement in this case, or whether it destroyed the above germ of Weichselbaum, I cannot tell, but as the death-rate has been high in this epidemic and as this was a severe case, the effect was truly remarkable.

I believe that in the near future, with the aid of all the wonderful modern scientific appliances, together with the fact that some of the brightest minds in the profession are giving their entire attention to bacteriology, a serum will be prepared for each disease due to a specific germ, and that the serum will not only destroy the germ but render the person immune against that particular organism.

The serum used in my case was made by Parke, Davis & Co., and great care was used in the technique by sterilizing the needle as well as washing off the place of injection with bichloride solution and afterward sealing the needle puncture with collodion.

W. L. WARRINER, M.D.

TOPEKA, KAS.